MODEL

TM24-17R/RP

TM32-17/P

COLOR MONITOR

SERVICE MANUAL

Ikegami

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

SA 1965 SA 1966

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

SA 1965

The lightning flash with arrowhead within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.

SA 1966

The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the equipment.

WARNING: FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS (REFER TO SERVICE LITERATURE).

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR WATER.

INFORMATION TO USER FOR FCC

Warning

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications.
It has been tested with a class A computing device and found to comply with the limits for a Class A computing device in accordance with the specifications in subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.
Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

IMPORTANT SAFETY INSTRUCTION

1. General

① Read all of these instructions.

② Save these instructions for later use.

③ Follow all warnings and instructions marked on the television equipment.

④ Never push objects of any kind into this television monitor through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the television monitor.

⑤ Do not attempt to service this television monitor yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

⑥ Do not use attachments not recommended by the television equipment manufacturer as they may result in the risk of fire, electric shock, or injury to persons.

⑦ This television monitor has been preadjusted to meet the respective broadcasting standard signals. So, it cannot be used with the signals of different broadcasting standards.

⑧ When keeping or transporting the unit for a long time, pack it in the supplied carton or equivalent.

⑨ This monitor is heavy. When taking out of or putting it into a carton box, or setting, do not move or carry it by a person. You may drop it on your foot, or hurt your waist.



2. Power supply

① This television equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your television dealer or local power company.

② This television equipment is provided with a three-wire grounding type plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet.
Do not defeat the safety purpose of the grounding-type plug.

③ When connecting and disconnecting the power cable, be sure to hold the plug.

④ Do not allow anything to rest on the power cord. Do not locate this television equipment where the cord will be abused by persons walking on it.

⑤ For added protection for this television equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the equipment due to lightning and power-line surges.

⑥ Do not overload wall outlets and extension cords as this can result in fire or electric shock.

3. Usage and location

① Do not use this television equipment near water — for example, near a bath tub, wash-bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, or the like.

② Do not place this television equipment on an unstable cart, stand, or table. The television equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Use only with a cart or stand recommended by the manufacturer, or sold with the television equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.
Television equipment and cart combination should be moved with care.
Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.



③ Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to ensure reliable operation of the monitor and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the television equipment on a bed, sofa, rug, or other similar surface. (This television equipment should never be placed near or over a radiator or heat register.)
This television equipment monitor should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.

④ Avoid operating or placing (keeping) in hot (+40℃ or over) and cold (less than 0℃), excessively vibratory, or dusty place. And avoid operating or placing (keeping) in the places exposed to the direct sunlight. Otherwise the cabinet may deform or the phosphor of the CRT surface may deteriorate.

⑤ If an image of extremely high brightness is displayed on the screen for a long time, the CRT may cause burning.

4. Cleaning

① Unplug this television equipment from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

② Do not use thinner or benzine for cleaning. Otherwise, the cabinet may deform or the paint may peel away.

5. Repair

① Unplug this television monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power cord or plug is damaged or frayed.

b. If liquid has been spilled into the television monitor.

c. If the television monitor has been exposed to rain or water.

d. If the television monitor does not operate normally by following the operating instructions.
Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television monitor to normal operation.

e. If the television monitor has been dropped or the cabinet has been damaged.

f. When the monitor exhibits a distinct change in performance — this indicates a need for service.

② When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or injury to persons.

③ Upon completion of any service or repairs to this monitor, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.

④ For repair service, contact **Ikegami**'s authorized sales representative or **Ikegami** service window directly.

Precautions for Operation

(1) Never let this unit fall nor give it a strong shock.
Otherwise, it will be damaged.

(2) Do not detach the cabinet unless otherwise necessary.
High-voltage parts are contained in the cabinet and they are very dangerous if you touch them. Only the qualified service engineers are allowed to adjust the inside of the cabinet.

(3) This color monitor has been adjusted to the signals conforming to each broadcasting standard.
So, it cannot be used for signals of different broadcasting standards.
Be sure to operate the color monitor within the voltage range marked on its back.

(4) If the cabinet or screen is stained, wipe with soft cloth. At this time, avoid using benzine or thinner.
Otherwise, the paint may peel away.

(5) Note that, if video signals with high luminance are monitored on the CRT for long, the CRT may suffer from sticking.

(6) Avoid using and storing this unit in the following places:

- Hot (+40℃ or more) or cold (0℃ or less) places.
  Especially in a place where this unit is exposed to the direct rays of the sun, the cabinet may deform and the fluorescent screen of the CRT may be deteriorated.
- Humid and dusty places.
- Places where there is much vibration.
- Places where strong magnetism is generated.
- Places exposed to rain or water.
- When storing this unit for long or transporting it, pack it up in the supplied carton or equivalent beforehand.

■ Even if no picture can be monitored by performing daily adjustment or something seems to be wrong with this unit, do not dismantle this unit by yourself. In such a case, contact the service department of **Ikegami**.

■ Should this unit fail within one year after your acceptance, it will be repaired free of charge unless such a trouble is not caused by operator's mishandling or misuse.
However, the CRT and fuses are not covered by the warranty.

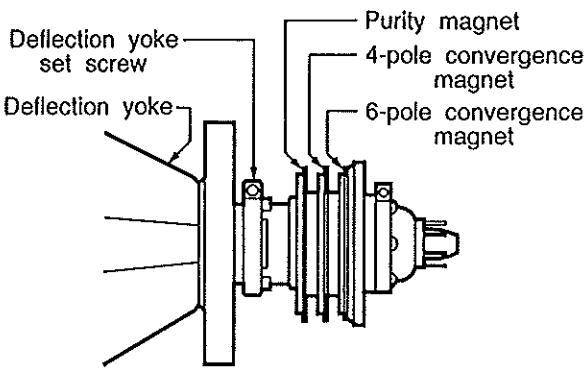
■ The specifications and appearance of this unit may be changed for further improvement without prior notice.

CONTENTS

1. MAINTENANCE and ADJUSTMENT

When the specified performance can no longer be obtained with the adjusters on the front panel or when parts have been replaced due to a malfunction, perform adjustment of the following parts.

1-1. MAIN CHASSIS



(1) Purity Adjustment

① Input the FULL WHITE signal or similar signal which produces an even brightness over the entire screen.

② Press the DEGAUSS switch to demagnetize the magnetized shadow mask.

③ Turn ON only the G. SCREEN switch to set the rasters of the screen to a single green color.

④ Loosen the deflection yoke set screw, remove the silicon which holds the deflection yoke and CRT in place, and slide the deflection yoke all the way back.

⑤ Loosen the lock ring which holds the magnets in place.

⑥ Adjust the two purity magnets alternately so that there are green vertical lines at the center of the screen.

⑦ While watching the screen, slide the deflection yoke forward so that the screen is an even green color. If the screen does not become an even green color, perform adjustment again from step ④.

⑧ Set to blue and red, and confirm that the screen is a single color.

⑨ Set to white rasters and if there is partial coloring of the rasters, slightly shift the position of the deflection yoke either forward or back.

⑩ After completing adjustment, tighten the deflection yoke set screw and lock ring.

(2) Convergence Adjustment

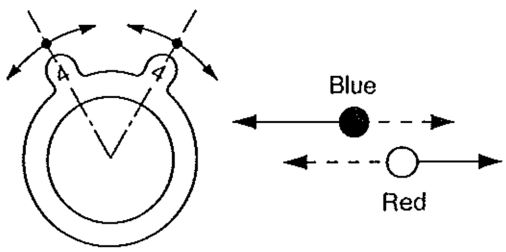
Before performing convergence adjustment, allow the monitor to warm up for at least 30 minutes. Input the CROSS HATCH signal.

(a) Center convergence

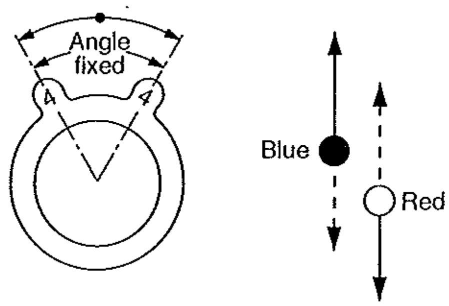
① Loosen the lock ring.

② Turn ON only the R. SCREEN and B. SCREEN switches to set to blue and red screen.

③ While paying attention to the cross section in the center of the screen, adjust the angles of the two 4-pole magnets as shown below to adjust the shifting of the vertical blue and red lines.

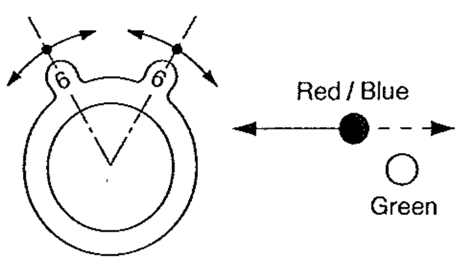


④ With the angle of the two 4-pole magnets remaining at that described in ③, rotate the two magnets simultaneously to adjust any shifting of horizontal lines.

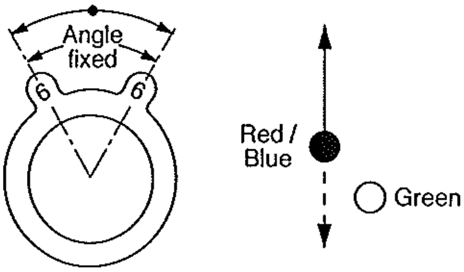


⑤ Turn OFF all SCREEN switches to set to all-white screen.

⑥ Adjust the angle of the two 6-pole magnets and adjust any shifting of the red / blue vertical lines and green vertical lines.



⑦ With the angle of the two 6-pole magnets remaining at that described in ⑥, rotate the two magnets simultaneously to adjust any shifting of the red / blue horizontal lines and green horizontal lines.



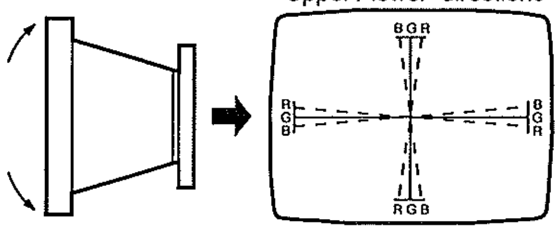
⑧ Tighten the lock ring after completing adjustment of the center convergence. If there is poor peripheral convergence, perform the adjustment described in following (b).

(b) Peripheral convergence

① Slightly loosen the deflection yoke set screw.

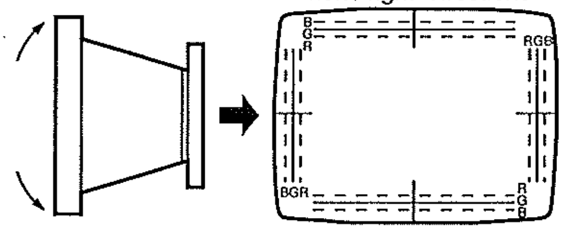
② Move the deflection yoke up, down, and to the left and right as shown below to adjust any peripheral shifting.

Upper / lower directions



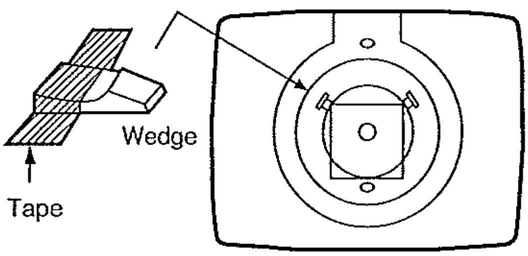
View as seen from side of deflection yoke.

Left / right directions



View as seen from top of deflection yoke.

③ After the completion of adjustment, insert wedges into the space between the deflection yoke and CRT as shown in the diagram below to fully lock the deflection yoke in place.



View as seen from back of CRT.

(3) Replacement of CRT

<TM24-17R/RP>

① Refer to K4-907481 of the exploded view, and remove the front and rear covers.
② Remove the two screws securing the front cover of the front panel, and remove the front cover.
③ Remove the screw securing the front panel, pull out the front panel, and pull out the connector (CN501) connected to the FRONT PANEL BOARD.
④ Pull out CN204 and CN202 inside the DEF & HV BOARD.
⑤ Pull out CN921 inside the POWER BOARD.
⑥ Remove the six screws securing the escutcheon, and remove the escutcheon.
⑦ Remove the CRT anode cap. As a high electric charge is charged inside the CRT, be careful to take precautions against electric shocks.
⑧ Remove the CRT SOCKET BOARD.
⑨ Pull out TB1 inside the CRT SOCKET BOARD.
⑩ Remove the four screws securing the main unit and CRT, and remove the CRT from the main unit. Be careful not to break the neck of the CRT.
⑪ Peel off the glass tape securing the degauss coil, and remove the degauss coil from the CRT.
⑫ Cut the tie-wrap attached to the ear of the CRT, and remove the GND wire of the CRT.
⑬ Using a new CRT, assemble in the reverse order of the above steps.

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① Refer to K4-907487 of the exploded view, and remove the front cover, top cover, and two side covers.
② Remove the seven screws securing the panel cover, and remove the panel cover.
③ Pull out CN202 inside the DEF & HV BOARD.
④ Pull out CN921 inside the POWER BOARD.
⑤ Remove the eight screws securing the escutcheon, and remove the escutcheon.
Pull out CN602 of the FRONT LEFT BOARD, and remove the escutcheon.
⑥ Remove the CRT anode cap. As a high electric charge is charged inside the CRT, be careful to take precautions against electric shocks.
⑦ Remove the CRT SOCKET BOARD.
⑧ Pull out TB1 inside the CRT SOCKET BOARD.
⑨ Remove the four screws securing the main unit and CRT, and remove the CRT from the main unit.
Be careful not to break the neck of the CRT.

⑩ Peel off the glass tape securing the degauss coil, and remove the degauss coil from the CRT.
⑪ Cut the tie-wrap attached to the ear of the CRT, and remove the GND wire of the CRT.
⑫ Using a new CRT, assemble in the reverse order of the above steps.

(4) Adjustment after CRT Replacement

1. Tentative setting of SCREEN VR

① Before turning on the power, make sure that all the connectors are correctly connected, paying special attention to the connectors of anode cap, FOCUS and SCREEN.

② Set the SCREEN VR, which is close to the pattern side of the PC board, of the flyback transformer on the DEF & HV BOARD to its MIN position.

③ Connect the AC cable as well as the signal cable and then turn the power on. At this time, make sure that no troubles are found.

④ Rotate slowly the SCREEN VR clockwise to let pictures appear on the screen and set the SCREEN VR to the point where the luminance of the pictures does not vary even when the SCREEN VR is rotated.

2. Setting of WIDTH, HEIGHT, etc.
(Refer to Table 1 of Scanning Size.)

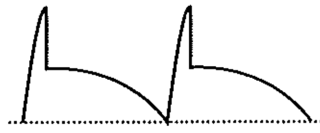
① Perform the adjustments of scanning size, linearity, pincushion distortion, raster position and picture position in normal scanning, using the following VRs.

DEF & HV BOARD
VR103 (NOR WIDTH)
VR104 (PIN LEVEL)
VR105 (SIDE PIN PHASE)
VR203 (H CENT)
VR101 (V CENT)

VIDEO BOARD
VR904 (V LIN)
VR905 (NOR HEIGHT)
VR908 (H PHASE)

VIDEO SUB2 BOARD
VR1 (V.TOP LIN)

② After the above adjustment is completed, connect the probe to TP104 on the DEF & HV BOARD and adjust VR903 (V BIAS) on the VIDEO BOARD so that the voltage of waveform end of vertical deflection output can be DC +6V.



③ Adjust the scan size when performing under-scanning and 4:3 scanning using the VR201 (US WIDTH) on the DEF & HV BOARD, VR906 (US HEIGHT) on the VIDEO BOARD, and VR202 (4:3 WIDTH) on the DEF & HV BOARD.

Table 1 Scanning Size

	TM24-17 (mm)		TM32-17 (mm)	
	Height	Width	Height	Width
Normal Scan	The outer frame of picture contacts the escutcheon.	←	←	←
Under Scan	260	462	360	640
4 : 3 Scan	260	352	360	480

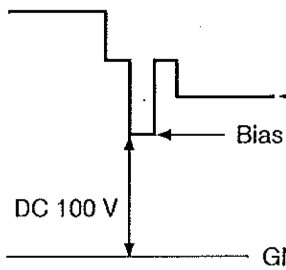
3. Setting of SCREEN VR
(Reference Channel Decision)

① Connect the probe of an oscilloscope to TP1 (RK) on the CRT SOCKET BOARD and monitor the waveforms from the end of V. BLK to start of pictures at a V rate.

② Next, adjust the SCREEN VR until the top of bias pulse reaches 100V DC.

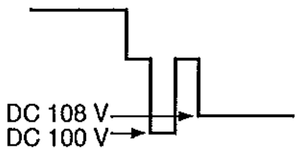
③ Not changing the range of the oscilloscope, measure the voltages of bias pulse at TP2 (GK) and TP3 (BK) on the CRT SOCKET BOARD. Then, readjust the channel of the intermediate voltage among the three channels to 100V DC with the SCREEN VR in order to decide the reference channel.

Setting of BIAS PULSE LEVEL
(V magnifying waveform)



④ Set the BACKGROUND VR of the reference channel decided in the step ③ to its MAX position.
Next, preset the BRIGHTNESS and adjust the pedestal potential of the reference channel to 108V DC with the PRESET BRIGHTNESS VR.

Setting of PRESET BRIGHTNESS



⑤ Adjust the BACKGROUND VR set to MAX position in the above step so that the raster of the reference channel can be just before cut off on the screen.
In addition, adjust in the same way as the reference channel in the other channels using the respective BACKGROUND VRs.

⑥ Input the signal of detailed figures and optimize the FOCUS VR.

4.-a White Balance Adjustment (with Color Analyzer)

When replacing a CRT, adjust the white balance in the following manner.

① Demagnetize the entire monitor with a demagnetizing coil (external).

② Input the WINDOW signal as the composite signal, apply the sensor of color analyzer to the center of a CRT and cover the CRT with a blackout curtain or something.

③ Adjust the BACKGROUND and GAIN VRs on the FRONT PANEL so that the LOW LIGHT (5cd/m^2) and HIGH LIGHT (120cd/m^2) in the indication of the color analyzer can be equal. (The R channel is a reference.)
For the value of x and y, refer to the following.

④ Make sure that the value is almost equal in Y/C or AUX.

	x	y	
6500K	.313	.329	(USA, EUR)
9300K	.283	.297	(JPN)

4.-b White Balance Adjustment (with human eyes)

① Input the COLOR BAR signal and turn the MONO switch on. (Black-and-white step waveforms of a gray scale chart, etc. might also be available.)

② Paying attention to the dark area of the COLOR BAR signal, adjust the R, G and B BACKGROUND VRs on the FRONT PANEL so that the color of the area can be white.

③ Next, pay attention to the bright area of the COLOR BAR signal and adjust the G GAIN and B GAIN VRs on the FRONT PANEL so that the color of the area can be white.

④ Adjust the G and B GAIN VRs for the bright area as well as the G and B BACKGROUND VRs for the dark area so that all the area from bright one to dark one can be same color.

4.-c Adjustment of luminance according to scan size

Perform this adjustment after completing the adjustment of white balance during ④-a or ④-b normal scanning.

① Input the composite window signal.
② Place a color analyzer at the center of the CRT screen to perform normal scanning, cover the screen with a dark cloth, and measure the luminance. (Preset the contrast and brightness.)
③ Set the scan size to under-scanning, measure the luminance, and adjust VR2 (U-SCAN CONT) on the VIDEO SUB BOARD so that the luminance becomes the same as that measured at ②.
④ Set the scan size to 4:3 scanning, and adjust VR1 (4:3 CONT) on the VIDEO SUB BOARD in the same way as ③.

If a color analyzer is not available, adjust visually.

1-2. VIDEO BOARD

The input signal is to be the COLOR BAR (VIDEO A) input unless otherwise specified.

(1) Items Check

① Set all the VRs on the VIDEO BOARD to the center position and attach the VIDEO BOARD to the main body of the monitor.

② Connect the specified cables to the connectors on the PC board respectively.

(2) Operation

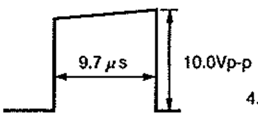
① Connect the AC cable after connecting the signal cable and turn the POWER switch on.

② After turning the POWER switch on, make sure that no trouble are found. Then, set the SCAN switch to "NOR" position and obtain a synchronization by VR901 (H HOLD) and VR902 (N. V HOLD) for NTSC / VR401 (P. V HOLD) for PAL and next, adjust the height and width using VR905 (NOR HEIGHT) on the VIDEO BOARD and VR202 (NOR WIDTH) on the DEF & POWER BOARD in order to let the proper pictures appear on the screen.

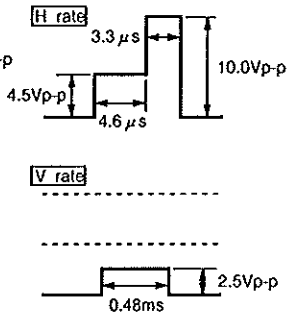
(3) Waveform Check (Pulse System)

① Check the waveforms at the following TPs.

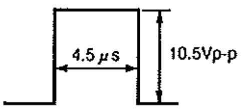
· TP702 (HD)



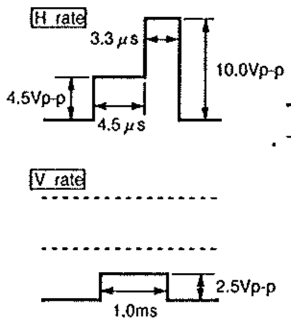
· TP706 (VIDEO S. C. P)



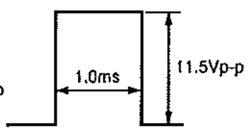
· TP703 (BP. CLP. P)



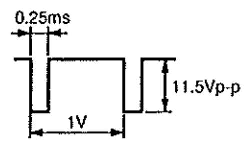
· TP705 (CHROMA S. C. P)



· TP707 (VD)



· TP708 (BKG VD)



(4) Adjustments of Deflection System

The NTSC signal to VIDEO A input terminal or the PAL signal to VIDEO B input terminal should be inputted before the adjustments.

a. VR901 (H HOLD)

① Select VIDEO A and connect the electrolytic capacitor which is equivalent to 47 μF/25V between TP901 and TP903 (GND) to get a horizontal free-running state.

② Adjust VR901 (H HOLD) so that the pictures can roll, slanting to the right.

b. VR902 (N. V HOLD)

① Select VIDEO A and connect the electrolytic capacitor which is equivalent to 47 μF/25V between TP902 and TP903 (GND) to get a vertical free-running state.

② Adjust VR902 (N. V HOLD) so that the pictures can roll upward a little faster.

c. VR401 (P. V HOLD)

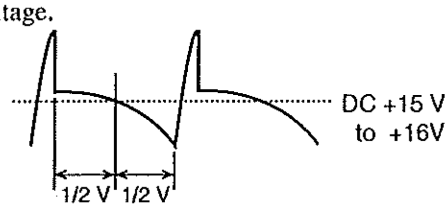
① Select VIDEO B and connect the electrolytic capacitor which is equivalent to 47 μF/25V between TP902 and TP903 (GND) to get a vertical free-running state.

② Adjust VR401 (P. V HOLD) so that the pictures can roll upward a little faster.

d. VR903 (V BIAS)

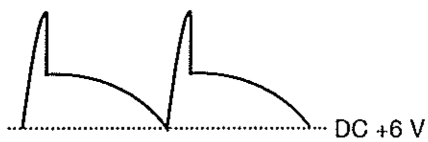
① Select VIDEO A and set the SCAN switch to "NOR" position.

② Connect the probe to TP104 on the DEF & HV BOARD and adjust the voltage at the medium point of 1V to 15V to 16V, half of the supply voltage.



③ At this time, adjust generally HEIGHT (VR905), LINEARITY (VR904),(VR1 on the VIDEO SUB2 BOARD), WIDTH (VR103 on the DEF & HV BOARD) and V CENT (VR101 on the DEF & HV BOARD), refering to Scanning Size (Table 2).

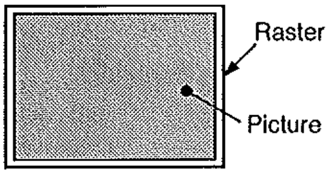
④ Next, readjust VR903 so that the voltage at the end of the V deflection can be +6V DC.



e. VR908 (H. PHASE)

① Input the COLOR BAR and set the SCAN switch on the FRONT PANEL to UNDER SCAN position. Then, adjust VR908 (H. PHASE) so that the picture can be positioned at the center of the raster.

② Input the CROSS HATCH signal and check the side pin. When the side pin is wrong, optimize it with VR104 (PIN LEVEL) and VR105 (SIDE PIN PHASE) on the DEF & HV BOARD.



f. VR904 (V. LIN)
VR905 (NOR HEIGHT)
on the VIDEO BOARD
VR1 (V. TOP LIN)
on the VIDEO SUB2 BOARD

① Adjust the scanning size and V linearity in normal scanning using the above VRs.
(For the scanning size, refer to Table 2.)

g. VR906 (US HEIGHT)
on the VIDEO BOARD

VR201 (US WIDTH)
VR202 (4: 3 WIDTH)
on the DEF & HV BOARD

① Using the above VRs, adjust the scanning size of the pictures in under scanning as well as in 4 : 3 aspect ratio scanning as shown in the following table.

Table 2 Scanning Size

	TM24-17 (mm)		TM32-17 (mm)	
	Height	Width	Height	Width
Normal Scan	The outer frame of picture contacts the escutcheon.	←	←	←
Under Scan	260	462	360	640
4 : 3 Scan	260	352	360	480

(5) Level Adjustment of LUMINANCE Signal

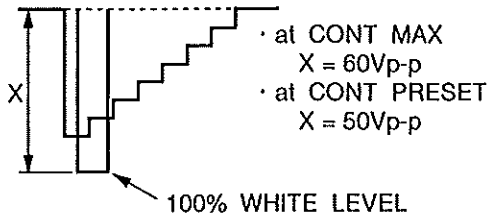
a. VR601 (R GAIN)

① Select AUX and set S1 (RGB/YPBPR selector switch) on the VIDEO BOARD to "RGB" position.

② Input the COLOR BAR (BURST, CHROMA : OFF) or the WINDOW signal (BURST, CHROMA : OFF) to the R/PR input.

③ Input the external SYNC signal and select EXT. SYNC.

④ Connect the probe to TP1 (RK) on the CRT SOCKET BOARD and adjust VR601 (R GAIN) so that the white area of 100% can be 60Vp-p when setting CONTRAST VR to MAX position.

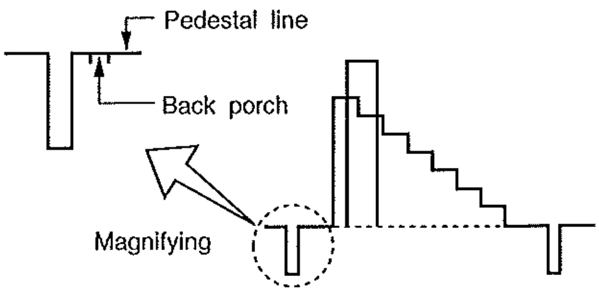


⑤ Preset CONTRAST and adjust the white area of 100% to 50Vp-p with the CONTRAST PRESET VR in this stage.
(In the last stage, it is to be adjusted to 120cd/m² with a luminance meter.)

b. VR103 (Y. LEVEL)
VR104 (Y CLP. LEVEL)

① Input the COLOR BAR (BURST, CHROMA : OFF) signal to the G/Y input and set S1 (RGB/YPBPR selector switch) on the VIDEO BOARD to "YPBPR" position.

② Preset CONTRAST as well as BRIGHTNESS and connect the probe to TP102 (GND : TP104), then adjust VR104 (Y CLP. LEVEL) until the level at back porch part of waveform matches the pedestal line. (Range of an oscilloscope : 50mV/div, 10 μ sec/div)



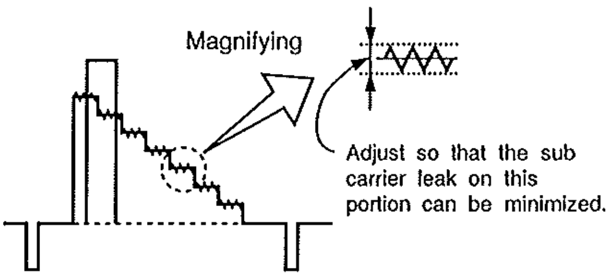
③ Connect the probe to TP1 (RK) on the CRT SOCKET BOARD and adjust VR103 (Y. LEVEL) until the white area of 100% reaches 50Vp-p. (BRIGHTNESS, CONTRAST : PRESET)

c. L201 (N. TRAP)
L301 (P. TRAP)

① Input the NTSC SMPTE COLOR BAR signal to VIDEO A input terminal and input the PAL EBU COLOR BAR signal to VIDEO B input terminal.

② Connect the probe to TP102 at a V rate, select VIDEO A, and set the COMB/TRAP switch on the FRONT PANEL to "TRAP" position. Then, magnifying the non-correlative portion between the scanning lines, that is, portion where color changes in the vertical direction, adjust L201 (N TRAP) so that the carrier leak on the portion can be minimized.

③ Select VIDEO B and adjust L301 (P TRAP) until the carrier leak is minimized.



d. VR202 (COMB Y LEVEL)
VR301 (PAL Y LEVEL)

① Input the NTSC COLOR BAR to VIDEO A and input the PAL COLOR BAR to VIDEO B. Then, connect the probe to TP1 (RK) on the CRT SOCKET BOARD. After selecting VIDEO A, adjust VR202 (COMB Y LEVEL) so that the white area of 100% can be 50Vp-p.
In the case of selecting VIDEO B, adjust VR301 (PAL Y LEVEL) in a similar way.

e. VR201 (Y/C Y LEVEL)

① Input the NTSC COLOR BAR signal to Y/C input and connect the probe to TP1 (RK) on the CRT SOCKET BOARD. After selecting Y/C, adjust VR201 (Y/C Y LEVEL) so that the white area of 100% can be 50Vp-p.

(6) Level Adjustment of CHROMINANCE Signal

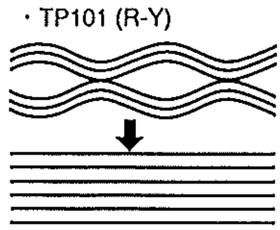
a. VC201 (N COLOR HOLD)
VC301 (P COLOR HOLD)

① Input the NTSC COLOR BAR signal to VIDEO A and input the PAL COLOR BAR signal to VIDEO B. Then, connect the probe to TP101 at a V rate.

② Select VIDEO A and set S501 (AUTO/FORCED) to "FORCED" position.

③ At this time, adjust VC201 (N COLOR HOLD) so that the wavy line of waveform on the oscilloscope can be a straight line.

Setting of COLOR HOLD



④ Next, select VIDEO B and adjust VC301 (P COLOR HOLD) so that the waveform can be a straight line in the same way as NTSC in step ③.

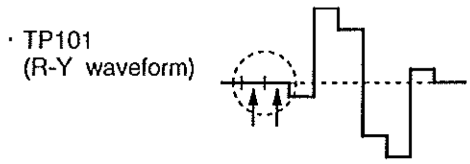
⑤ Lastly, set S501 to "AUTO" position again.

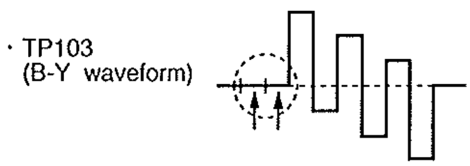
b. VR102 (R-Y CLP LEVEL)
VR106 (B-Y CLP LEVEL)

① Select the NTSC COLOR BAR of VIDEO A.

② Connect the probe to TP101 and adjust VR102 (R-Y CLP LEVEL) so that the level at the back porch part of waveform can match the pedestal line.

③ Next, connect the probe to TP103 and perform the adjustment using VR106 (B-Y CLP LEVEL) in the same way as the above. (Connect the GND terminal of the oscilloscope to TP104 and its range is to be 100mV/div, 10μsec/div.)



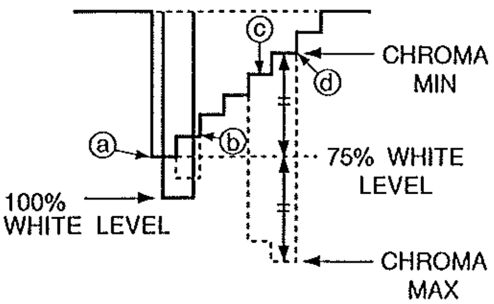


c. VR502 (D. R-Y LEVEL)

① Select the NTSC COLOR BAR of VIDEO A and connect the probe to TP1 (RK) on the CRT SOCKET BOARD. Then, adjust HUE and CHROMA VRs on the FRONT PANEL so that the waveform of the R OUTPUT can be the normal R signal. For adjusting methods of HUE and CHROMA, refer to the topic, **"Color Balance Adjustment"** in the operation manual.

② When setting the CHROMA VR to MIN position, adjust the spacing between (a) of 75% white and (d) to 2cm on the oscilloscope with its UNCAL knob.

③ Next, adjust VR502 (D. R-Y LEVEL) so that (d) can be 2cm to the plus (+) side toward (a) when setting the CHROMA VR to MAX position.



④ Here, preset the CHROMA VR, and adjust the CHROMA PRESET VR as well as the HUE PRESET VR on the FRONT PANEL to obtain the normal R waveform.

d. VR503 (D. B-Y LEVEL)

① Connect the probe to TP3 (BK) on the CRT SOCKET BOARD and adjust VR503 (D. B-Y LEVEL) so that the waveform of B OUTPUT can be the normal B signal.

e. Waveform Check

① Check to see that the waveforms at TP1 (RK), TP2 (GK) and TP3 (BK) on the CRT SOCKET BOARD are respectively the normal R, G and B signals.

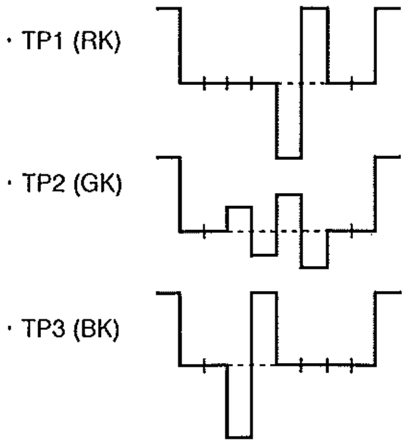
② In addition, make sure that the clamp voltage of pedestal is stable at each channel when turning the CONTRAST VR from MIN to MAX.

f. L306
VR303 (DL MATCH)

① Select the PAL COLOR BAR of VIDEO B and preset the CHROMA and the HUE.
Then, connect the probe to TP3 (BK) on the CRT SOCKET BOARD and adjust the chroma level and line crawling with L306 and VR303 (DL MATCH).

② Here, input the ANTI PAL signal and make sure that the waveforms at TP1, TP2 and TP3 are the waveforms shown below.

At ANTI PAL inputting



g. Waveform Check

① Select Y/C after inputting the NTSC COLOR BAR to the Y/C input. Next, make sure that level of each cathode on the CRT SOCKET BOARD is the same when inputting the composite signal.

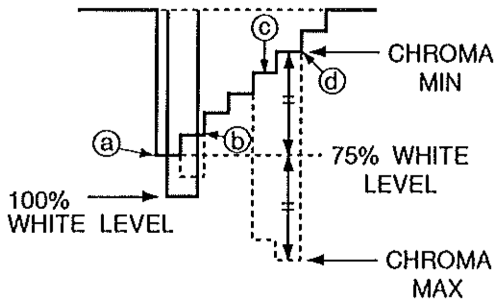
(7) Level Adjustment of YPBPR Input

a. VR101 (R-Y LEVEL)

① After inputting N10 or YPBPR signal which meets the SMPTE standard to R/R-Y, G/Y and B/B-Y inputs, select AUX.
Next, set S1 (RGB/YPBPR selector switch) to "YPBPR" position and connect the probe to TP1 (RK) on the CRT SOCKET BOARD.

② When setting the CHROMA VR to MIN position, adjust the spacing between (a) of 75% white and (d) to 2cm on the oscilloscope with its UNCAL knob.

③ Next, adjust VR101 (R-Y LEVEL) so that the (d) can be 2cm to the plus (+) side toward (a) when setting the CHROMA VR to "MAX" position.



b. YPBPR CHROMA (on the FRONT PANEL)

① Return the CHROMA VR to PRESET and adjust YPBPR CHROMA on the FRONT PANEL so that the waveform at TP1 (RK) can be the normal R waveform.

c. VR105 (B-Y LEVEL)

① Connect the probe to TP3 (BK) on the CRT SOCKET BOARD and adjust VR105 (B-Y LEVEL) to obtain the normal B waveform.

② Connect the probe to TP2 (GK) on the CRT SOCKET BOARD and make sure that the normal G waveform is obtained.

(8) Frequency Characteristic Check

a. VC501

① Input the SWEEP signal (without BURST) to VIDEO A input and connect the probe to TP1 on the CRT SOCKET BOARD.
Next, preset CONTRAST as well as BRIGHTNESS and adjust VC501 as follows.

NTSC: 60Hz to 7MHz +1/-3dB
PAL: 50Hz to 7MHz +1/-3dB

② Connect the probe to TP2 (GK) and TP3 (BK), and make sure that each waveform at them is within specified value.

③ Input the SWEEP signal to Y/C input and make sure respectively.

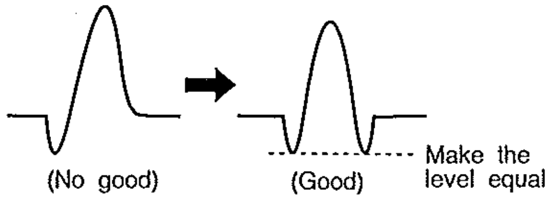
④ Input the SWEEP signal as the YPBPR input and set the COLOR/MONO switch to "MONO" position in order to make sure respectively.

⑤ Input the SWEEP signal as the RGB input and make sure respectively.

b. VR501 (PHASE EQ.)

① Input the DOT BAR signal to the VIDEO A input and turn on the APERTURE switch.

② Connect the probe to TP503 and adjust VR501 (PHASE EQ.) so that the edge balance can be symmetrical.



1-3. ADJUSTMENT PROCEDURE FOR DEF & HV BOARD

The input signal is to be the COLOR BAR unless otherwise specified.

(1) Items Check

① Make sure that the POWER switch of the monitor is turned off before attaching the DEF & HV BOARD to the main body of the monitor.

② Connect the specified cables to the connectors on the PC board respectively. Especially connect the connectors of high voltage system securely.

CRT anode cap
FOCUS connector
SCREEN connector
Deflection yoke connector

(2) Operation

① Set VR102 as well as SCREEN VR (which is close to the components side of the PC board) of the flyback transformer to MIN position and also set other VRs all to each center position.

② After connecting the signal cable, connect the AC cable and then turn the POWER switch on.

③ Make sure that no troubles are found after turning the power on. Then, rotate slowly the SCREEN VR clockwise to let pictures shine on the screen and set the SCREEN VR to the point where the luminance of the pictures does not vary even when the SCREEN VR is rotated.

④ Inputting the signal of detailed figures, adjust the FOCUS VR on the flyback transformer (above the SCREEN VR) so that the pictures can be clear. Next, adjust VR103 (NOR WIDTH), VR104 (PIN LEVEL), VR105 (SIDE PIN PHASE), VR203 (H CENT) and VR101 (V CENT) briefly.
(Refer to Table 3 of Scanning Size.)

Table 3 Scanning Size

	TM24-17 (mm)		TM32-17 (mm)	
	Height	Width	Height	Width
Normal Scan	The outer frame of picture contacts the escutcheon.	←	←	←
Under Scan	260	462	360	640
4 : 3 Scan	260	352	360	480

(3) Adjustment for Prevention of X-rays Radiation

a. VR102 (PROTECT)

① After checking that the POWER switch is turned off, connect the high voltage meter to the anode of CRT and also connect GND of the high voltage meter to that of CRT.

② After turning on the power, adjust VR2 (+B ADJ) on the POWER BOARD so that the voltage becomes 32 KV.

③ Rotating slowly VR102, set the VR to the point where protection of the high voltage operates.

④ When the protection starts operating, turn OFF the power once, adjust VR2 on the POWER BOARD so that the high voltage drops slightly, and then turn ON the power again.

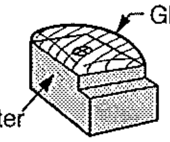
⑤ After checking that the power has turned ON, adjust VR2 on the POWER BOARD so that the high voltage gradually increases, and check that protection starts operating at 32 KV.

⑥ If the protection starts operating at voltages other than 32 KV, repeat the above steps until it starts operating at 32 KV.

⑦ After completing the above adjustment, connect the + lead of the digital voltmeter to TP5 of the power board and the - lead to TP7, and adjust VR2 on the power board so that the voltmeter reads +130V.

b. Sealing

After having completed the above adjustments, seal the whole adjusting side of VR102 using Araldite (No. 1500 Cemedine Co.,) as shown in the figure below.
These controls are not for field servicing and are fixed with glue after setting to avoid X-ray radiation which may cause one component failure in the circuit and misadjustment of these controls. The sealing method is shown in the figure.

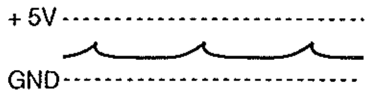


(4) Adjustments of High Voltage Regulator

a. VR204 (HV. ADJ.)

① Set the scanning size to NORMAL and make CRT cut off.

② Connect the probe of an oscilloscope to TP205 and adjust VR204 (HV. ADJ.) so that the whole waveforms can be in the range of GND to +5V at the DC range.



Setting of oscilloscope
rate 5ms / div
range 5V / div

Adjust carefully not to damage the waveforms

③ After turning the power off once, connect the high voltage meter to the anode of CRT and also connect GND of the high voltage meter to that of CRT. Then, turn the power on again.

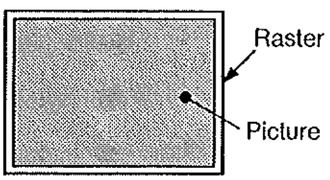
④ Preset CONTRAST as well as BRIGHTNESS and make sure that the high voltage output is 30kV±1kV.

⑤ Make sure that WIDTH does not vary when rotating quickly the CONTRAST and BRIGHTNESS VRs from MIN to MAX.
If WIDTH varies considerably at this time, adjust VR204 so that the change of WIDTH can be smallest. However, the high voltage output is to be 30kV±1kV.

(5) Adjustments of Scanning Size, etc.

a. VR103 (NOR WIDTH)
VR104 (PIN LEVEL)
VR105 (SIDE PIN PHASE)
VR203 (H CENT)

① Input the COLOR BAR signal and press the SCAN switch on the FRONT PANEL to obtain under scanning.
At this time, make sure that the picture is at the center of the raster.



If not so, adjust VR908 (H. PHASE) on the VIDEO BOARD so that the picture can be at the center of the raster.

② Input the CROSS HATCH signal and adjust VR104 (PIN LEVEL) as well as VR105 (SIDE PIN PHASE) so that the PIN distortion can be optimized in both normal scanning and under scanning.
Next, input the COLOR BAR signal and adjust WIDTH in normal scanning with VR103 (NOR WIDTH) as well as VR203 (H CENT).
(Refer to normal scanning size in Table 4 of Scanning Size.)

b. VR201 (US WIDTH)

Input the COLOR BAR signal and adjust VR201 (US WIDTH) so that WIDTH of picture can be 462mm for 24" or 640mm for 32" in under scanning.

c. VR202 (4:3 Width)

Input the COLOR BAR signal, set 4:3 scanning, and adjust VR202 (4:3 WIDTH) so that the width becomes 24" (352 mm) and 32" (480 mm).
(See Table 4. Scan Sizes.)

d. VR101 (V CENT)

Input the COLOR BAR signal and adjust VR101 (V CENT) so that the center of raster in vertical direction can be that of CRT in vertical direction at normal scanning.
At this time, if the scanning size (HEIGHT) is wrong, adjust VR905 (NOR HEIGHT) on the VIDEO BOARD so that the outer frame of picture can contact the escutcheon.
In addition, it is necessary to adjust VR906 (US HEIGHT) and VR907 (16 : 9 HEIGHT) on the VIDEO BOARD when VR905 (NOR HEIGHT) is adjusted. The scanning sizes of picture is as follows.

Table 4 Scanning Size

	TM24-17 (mm)		TM32-17 (mm)	
	Height	Width	Height	Width
Normal Scan	The outer frame of picture contacts the escutcheon.	←	←	←
Under Scan	260	462	360	640
4 : 3 Scan	260	352	360	480

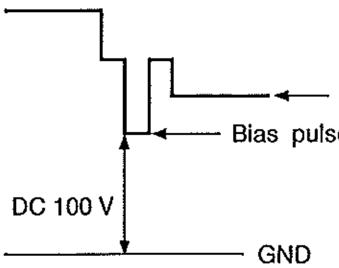
(6) Adjustments of SCREEN VR and FOCUS VR

① Connect the probe of an oscilloscope to TP1 (RK) on the CRT SOCKET BOARD and monitor the waveforms from the end of V. BLK to start of pictures at a V rate.

② Next, adjust the SCREEN VR until the top of bias pulse reaches 100V DC.

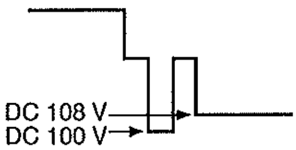
③ Not changing the range of the oscilloscope, measure the voltages of bias pulse at TP2 (GK) and TP3 (BK) on the CRT SOCKET BOARD. Then, readjust the channel of the intermediate voltage among the three channels to 100V DC with the SCREEN VR in order to decide the reference channel.

Setting of BIAS PULSE LEVEL
(V magnifying waveform)



④ Set the BACKGROUND VR of the reference channel decided in the step ③ to its MAX position.
Next, preset the BRIGHTNESS and adjust the pedestal potential of the reference channel to 108V DC with the PRESET BRIGHTNESS VR.

Setting of PRESET BRIGHTNESS



⑤ Adjust the BACKGROUND VR set to MAX position in the above step so that the raster of the reference channel can be just before cut off on the screen.
In addition, adjust in the same way as the reference channel in the other channels using the respective BACKGROUND VRs.

⑥ Input the signal of detailed figures and optimize the FOCUS VR.

1-4.ADJUSTMENT PROCEDURE for POWER BOARD

Use the color bar signal for the input signal unless specified otherwise.

(1) Items Check

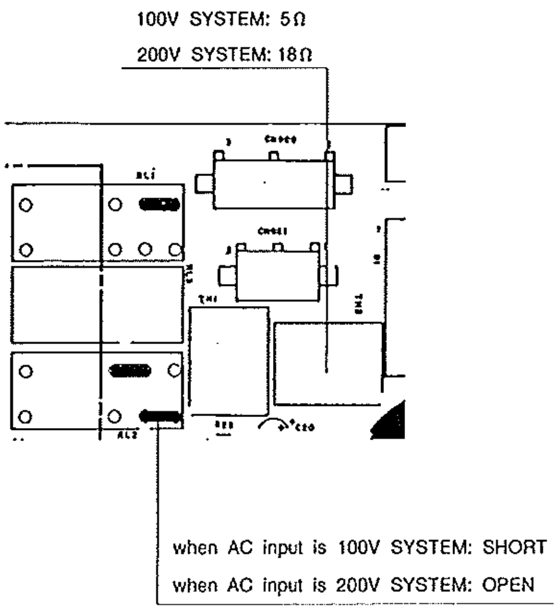
① The dedicated POWER BOARD (100V or 200V) are used for this monitor. Refer to the schematic diagram (C21-904827) and the following table to check if the POWER BOARD is 100V or 200V.

② Attach the POWER BOARD to the unit. Check that the power switch of the monitor is OFF before attaching.

③ Connect the connectors of the board to the designated cable.

④Like ①, refer to the following table, and supply the appropriate power supply voltage for the POWER BOARD to CN101 of the monitor. Take note that supplying an inappropriate power voltage may cause malfunction. Particularly supplying a 200V power to a 100V POWER BOARD will cause the monitor to break down without fail.

	TH2	RL2③-④	POWER VOLTAGE
100V	5Ω	SHORT	100V~120V
200V	18Ω	OPEN	200V~240V



(2)+B Adjustment

a. VR2 (+B ADJ)

① Take VR1 (MIN VOL) as MIN and VR2 (+B ADJ) as the center.

② Connect the signal cable and AC cable, turn ON the power switch, and check that the unit works normally.

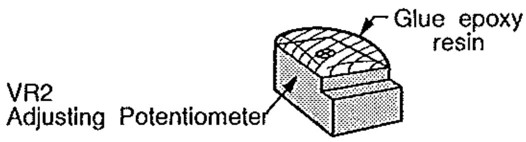
③ Connect the"+" lead of the digital voltmeter to TP5 of the POWER BOARD and the"-" lead to TP7, and adjust VR2 (+B ADJ) so that the voltmeter reads +130V.

④ Check that the following voltages are as follows.

TP1 → +15V ±2V
TP2 → +45V ±2V
TP4 → +150V ±2V

Since the silking label on the board indicates as :
TP2→ +9.5V
TP4→ +155V
So adjust TP2 to +45V ±2V ,and
TP4 to +150V ±2V

⑤ After completing the above adjustment, attach the whole adjusting face of VR2 using (glue epoxy resin) cement 1500 as shown in the following Fig.



(3)MIN VOLTAGE adjustment

a.VR1 (MIN VOL)

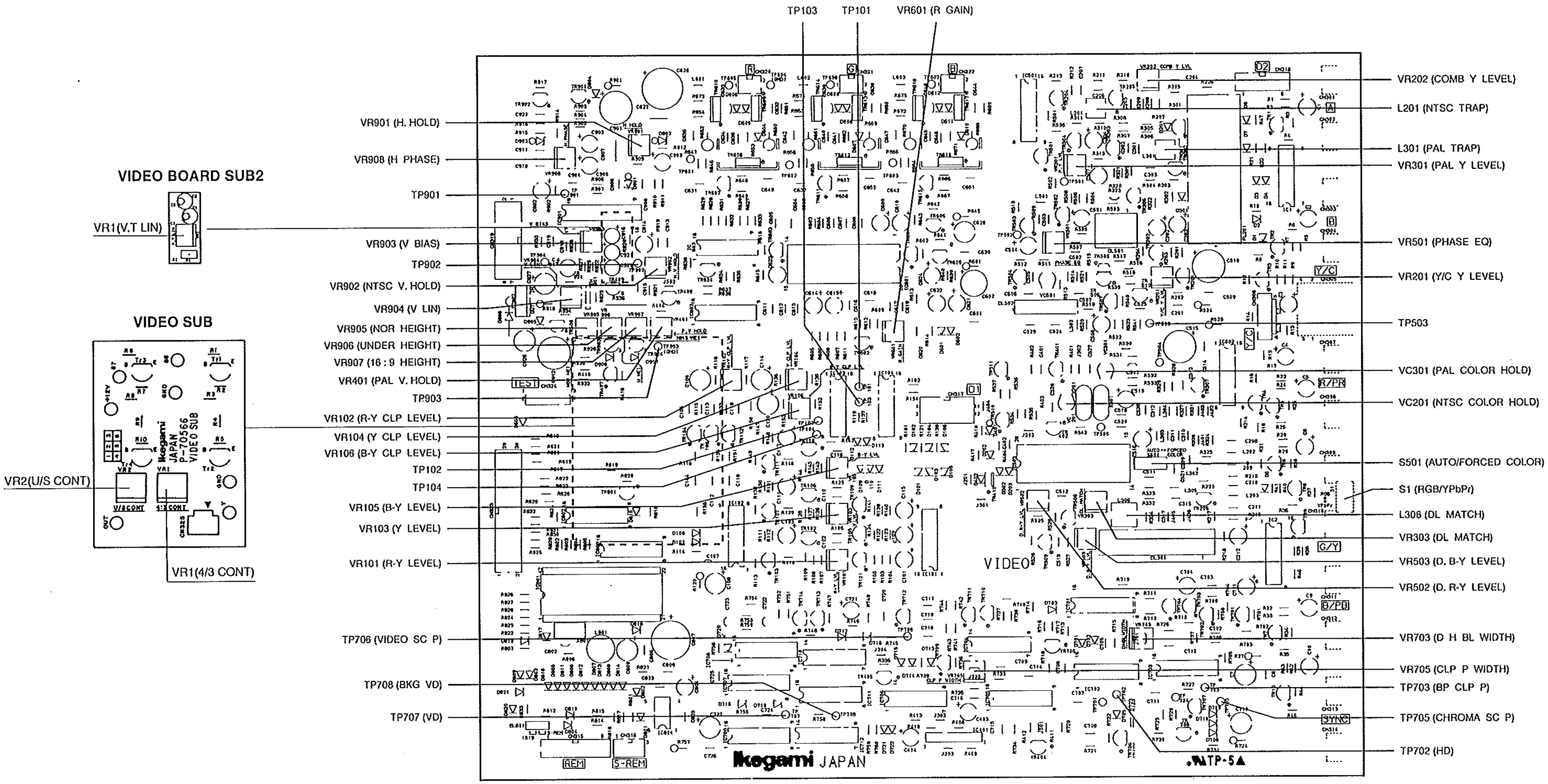
①Using an AC power supply whose voltage can be varied, connect an AC digital voltmeter so that its output voltage can be measured. Then supply AC85V to the monitor in the case of the 100V POWER BOARD and AC175V in the case of the 200V power board, and turn ON the power switch.

② Connect the"+" lead of the digital voltmeter to TP5 of the POWER BOARD and the"-" lead to TP7, and check that the voltmeter reads +130V.

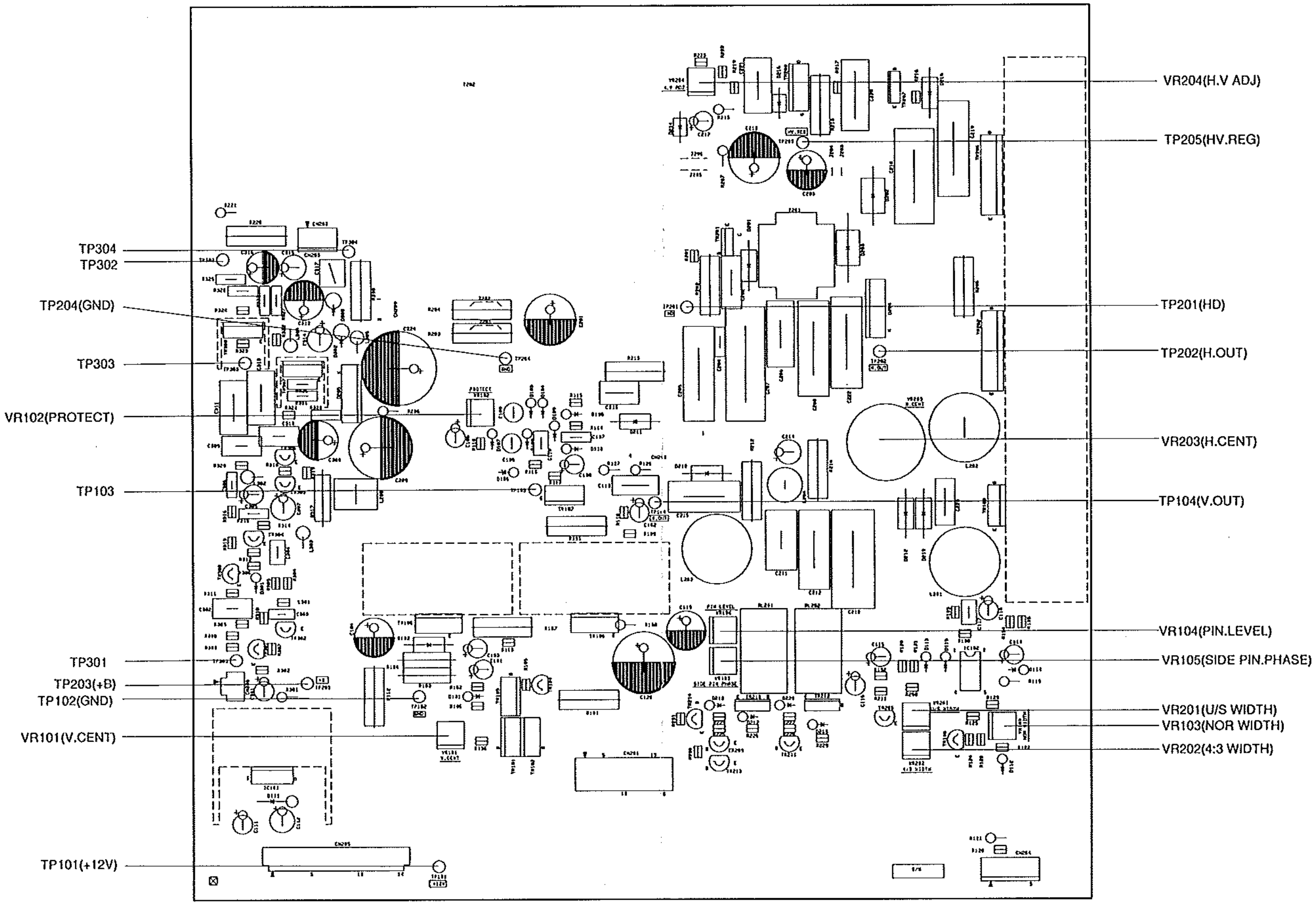
③ Rotate VR1 (MIN VOL) slowly in the MAX direction until the digital voltmeter reading starts dropping from +130V.

④ After completing the above, raise the power supply voltage slightly, start dropping the power supply voltage gradually, and check that the reading starts dropping from +130V at AC85V in the case of the 100V and at AC175V in the case of 200V. If it does not, repeat steps ② to ④ and adjust.

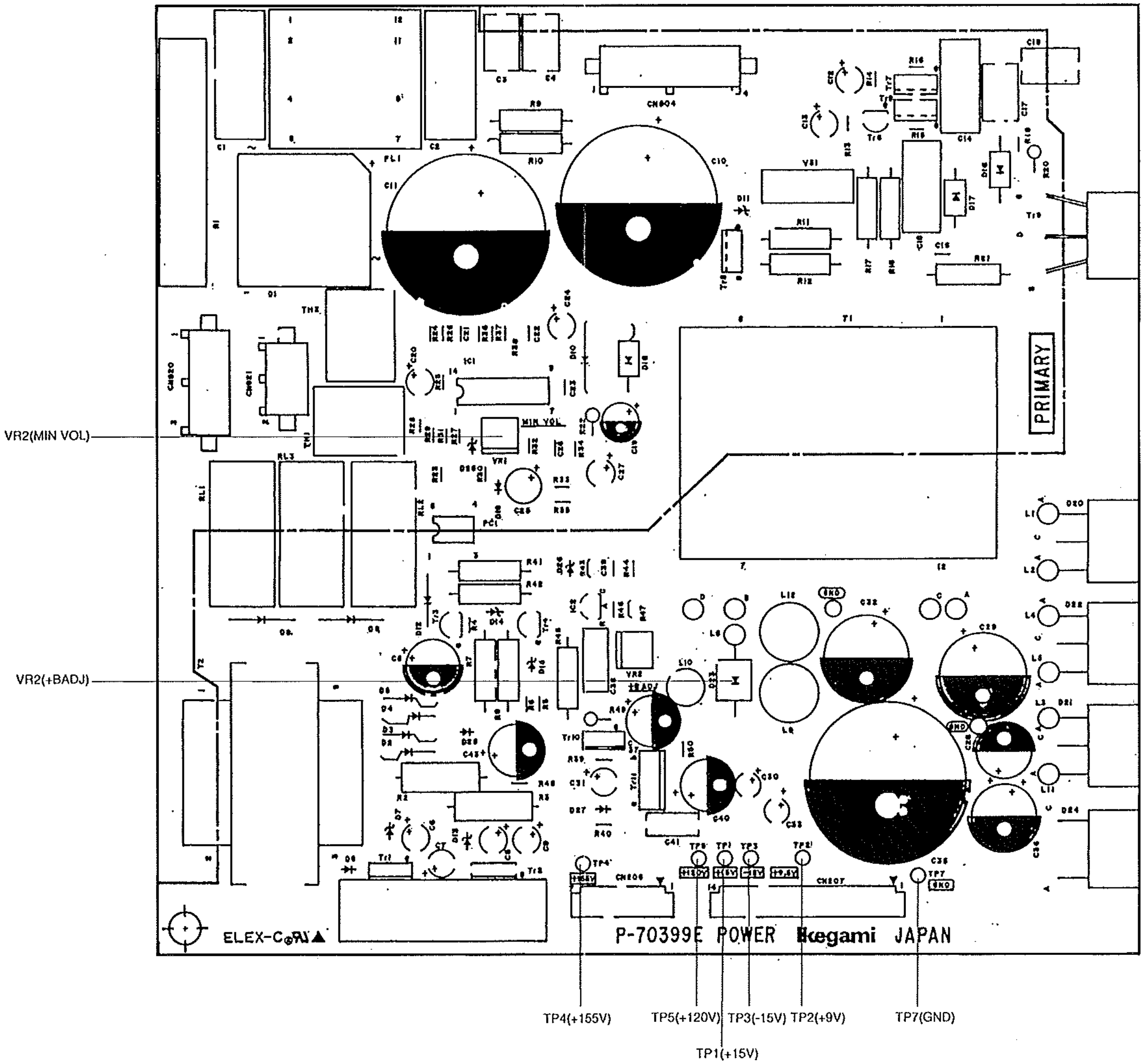
2. PARTS LOCATION



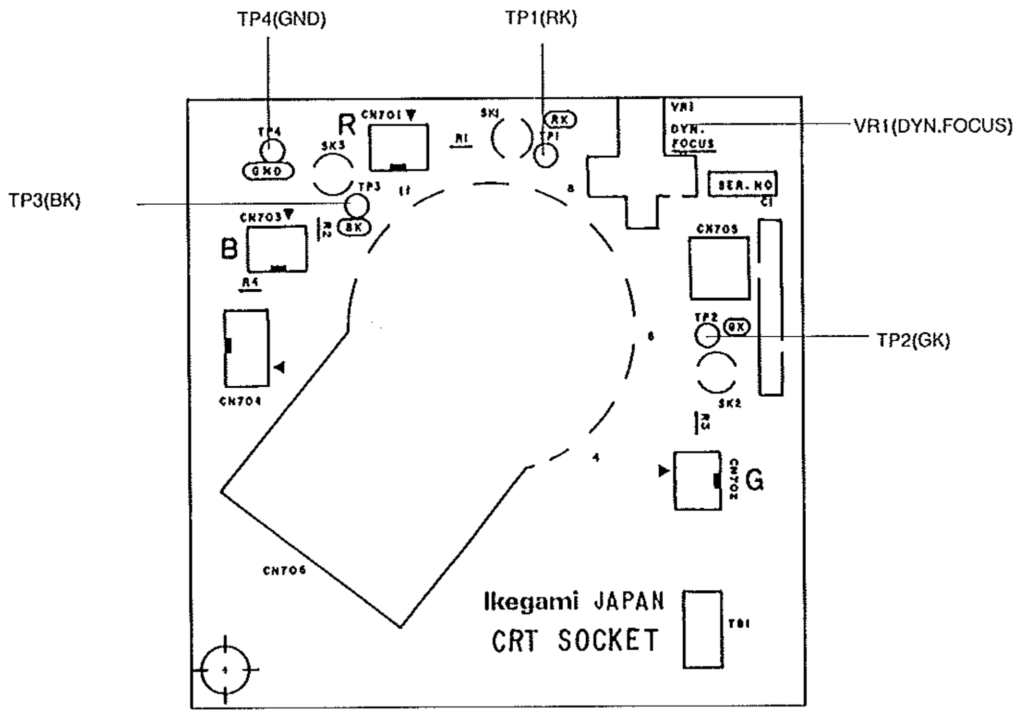
TM24/32-17
VIDEO BOARD
Parts Location



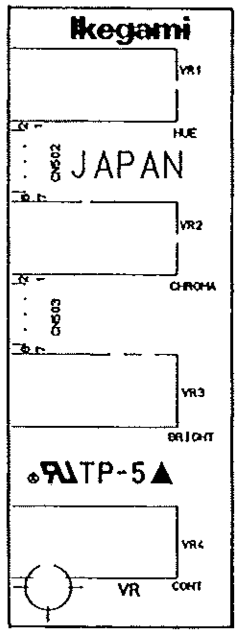
TM24/32-17
DEF&HV BOARD
Parts Location



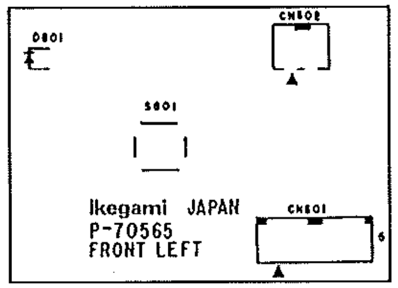
TM24/32-17
POWER BOARD
Parts Location



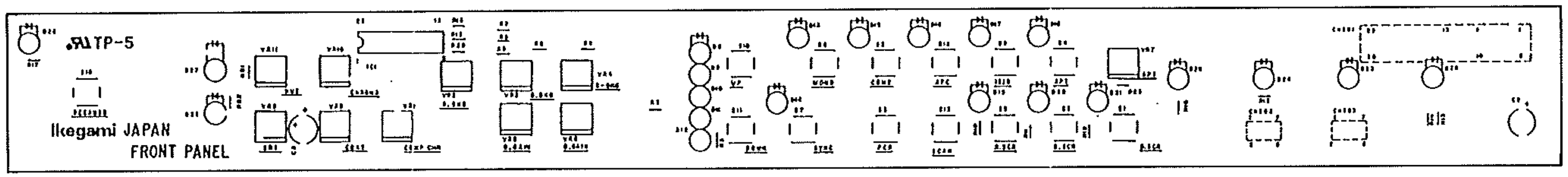
TM24/32-17
CRT SOCKET BOARD
PARTS LOCATION



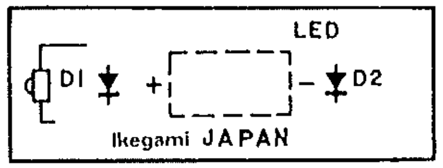
TM24/32-17
VR BOARD
PARTS LOCATION



TM32-17
FRONT LEFT BOARD
PARTS LOCATION

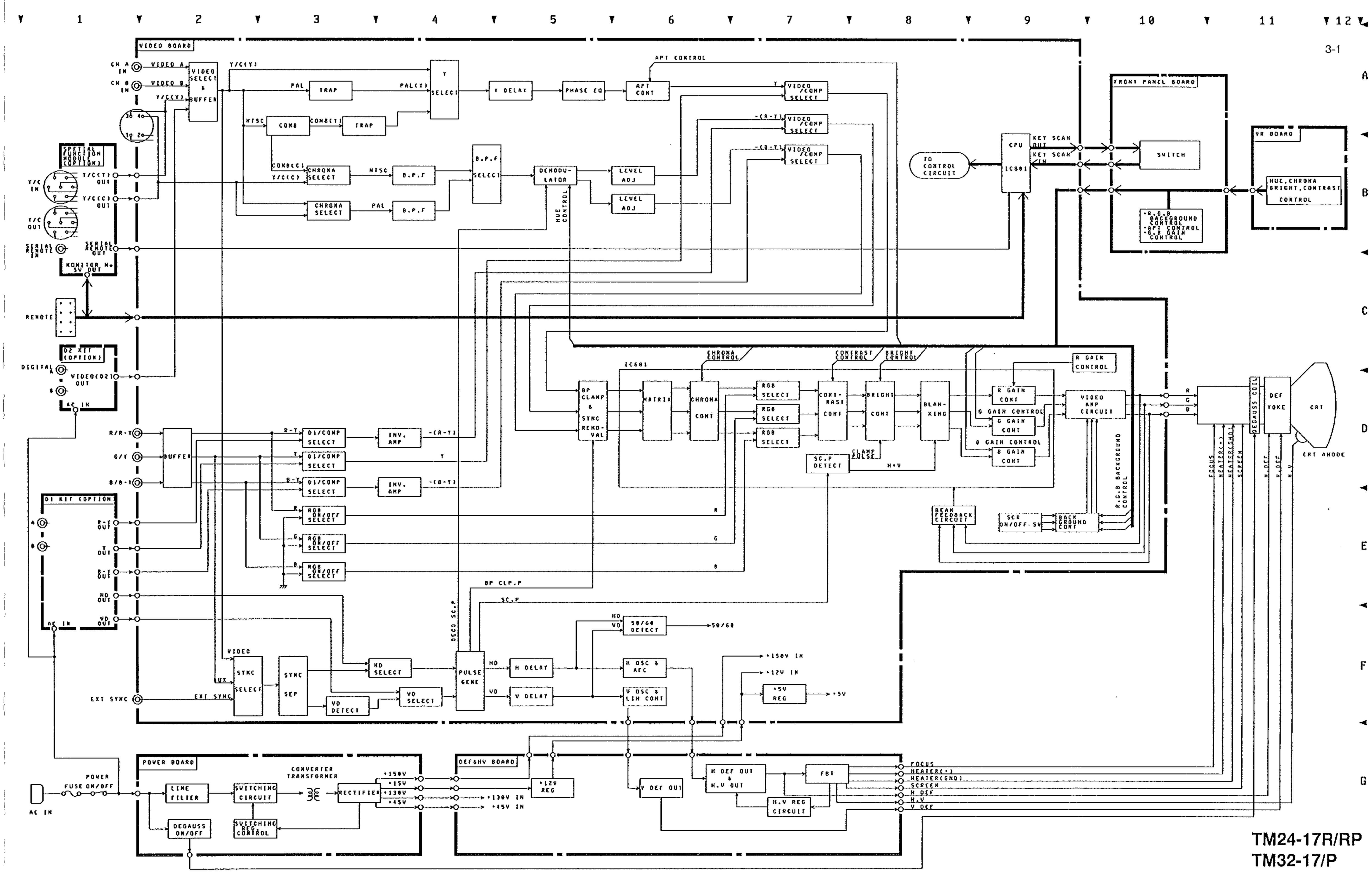


TM24/32-17
FRONT PANEL BOARD
PARTS LOCATION

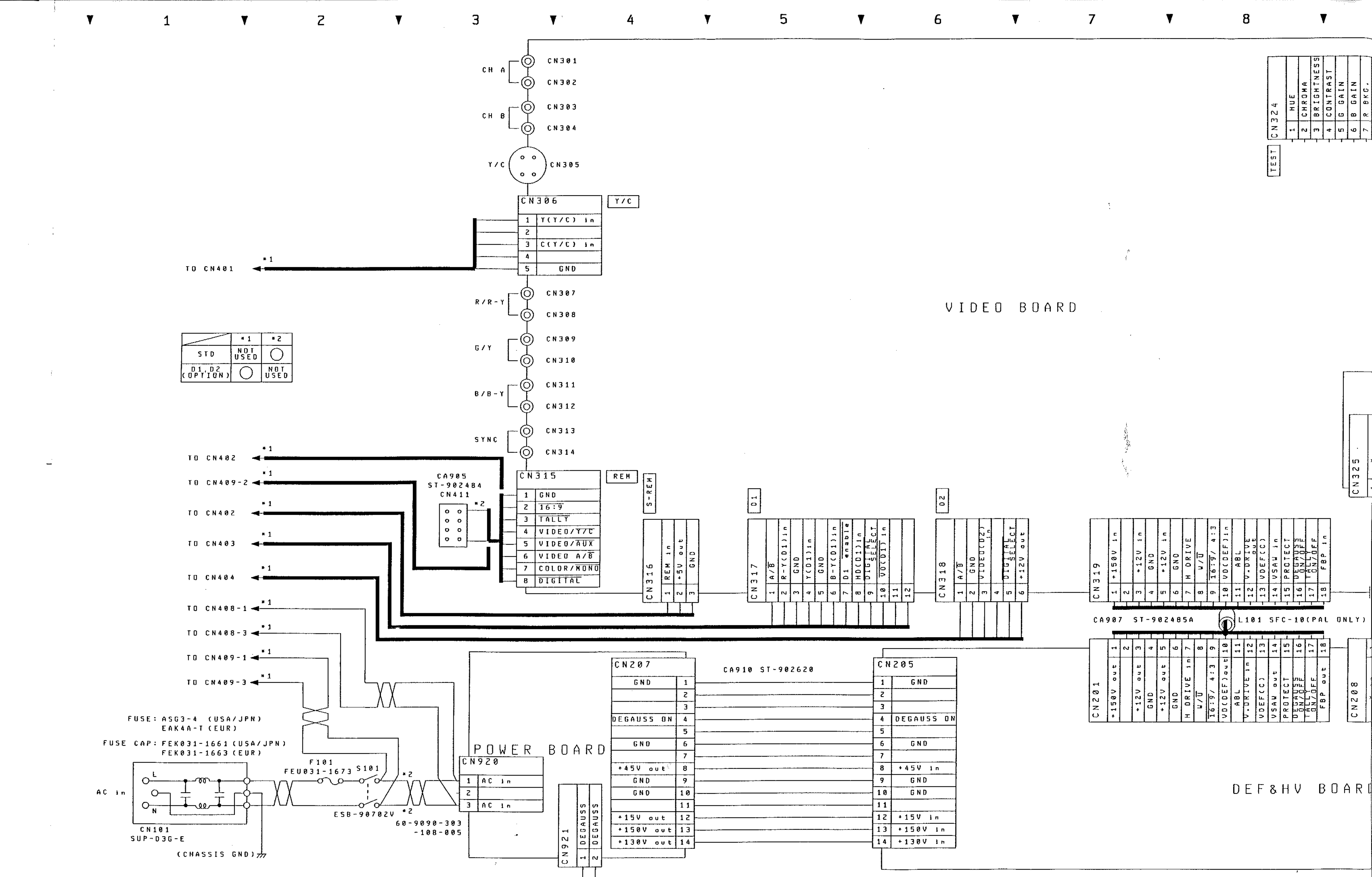


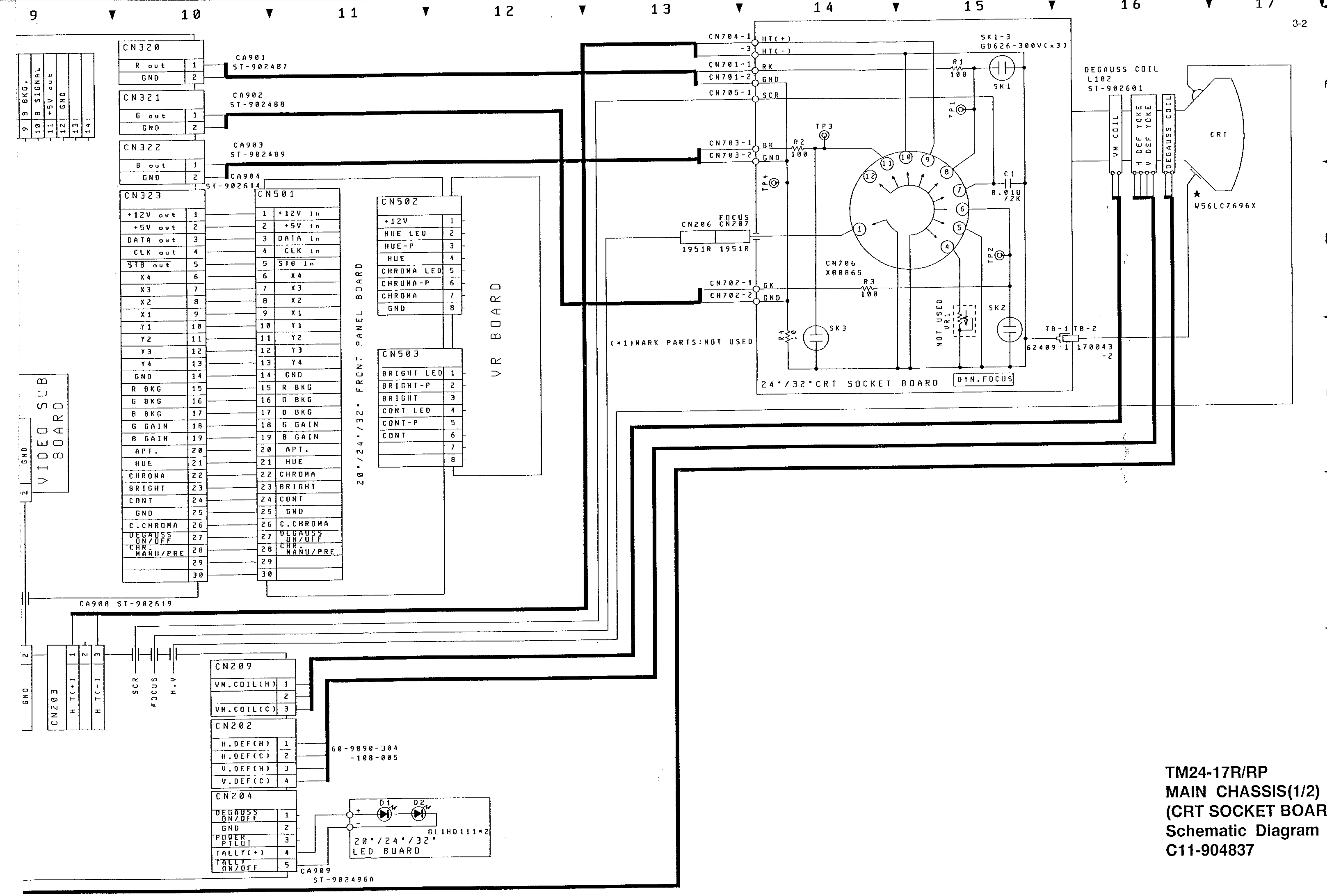
TM32-17
LED BOARD
PARTS LOCATION

TM24/32-17
CRT SOCKET BOARD
VR BOARD
FRONT LEFT BOARD
FRONT PANEL BOARD
LED BOARD
PARTS LOCATION

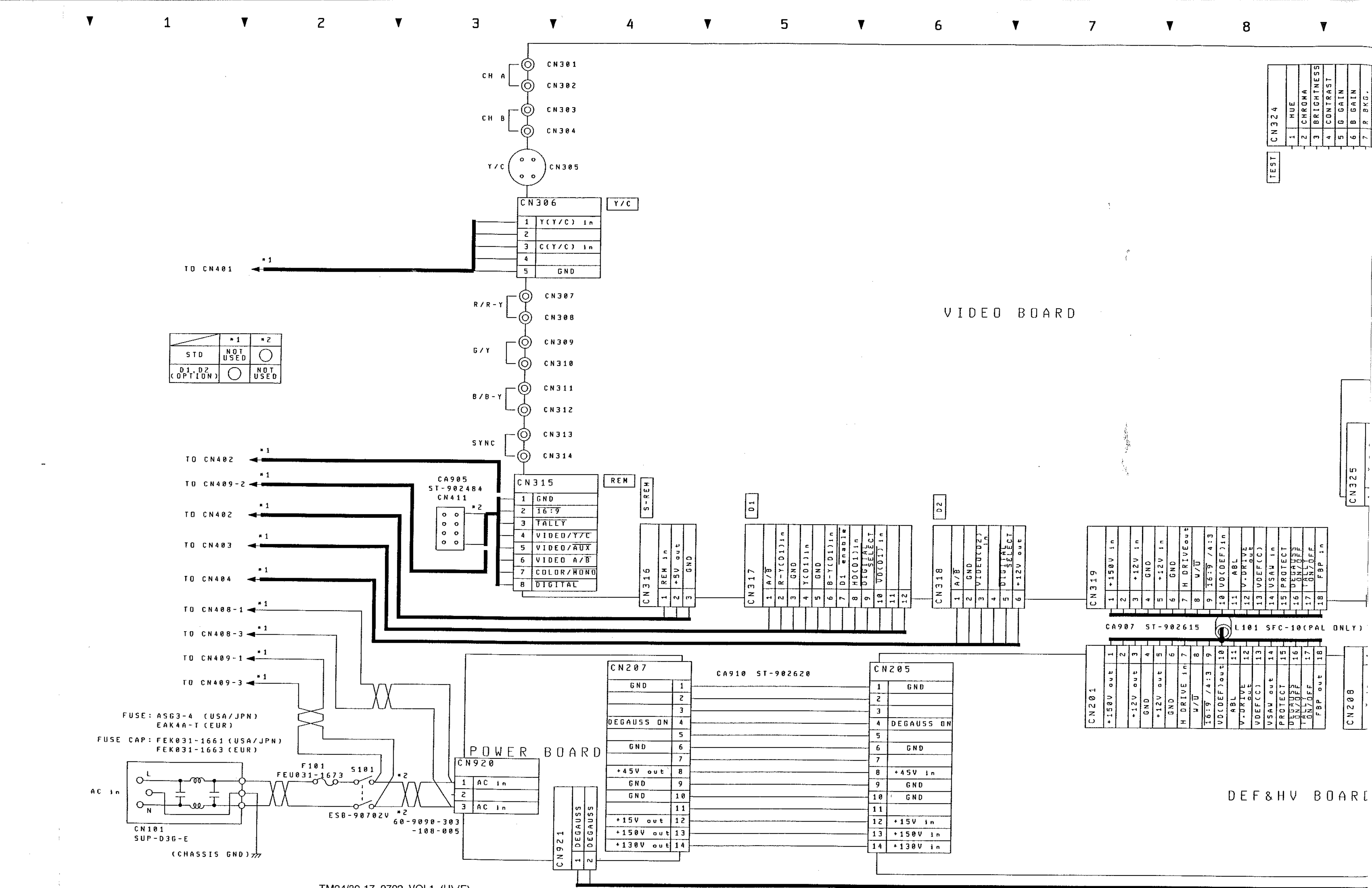


TM24-17R/RP
TM32-17/P
GENERAL
Block Diagram
C3-905023(1/1)

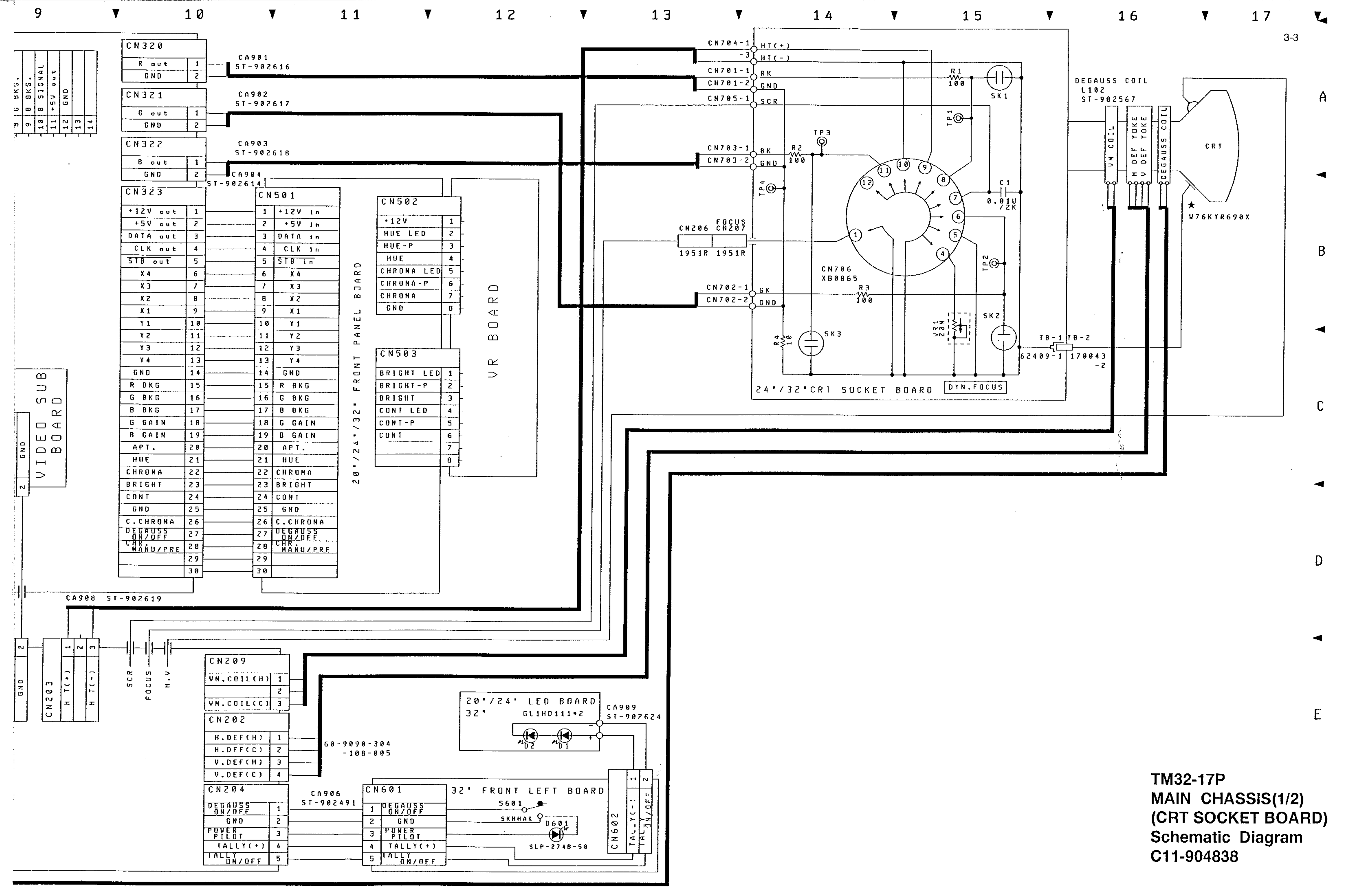

VIDEO BOARD
POWER BOARD
DEF&HV BOARD
CH A
CN301
CN302
CH B
CN303
CN304
Y/C
CN305
CN306
Y/C
1 Y(Y/C) in
2
3 C(Y/C) in
4
5 GND
TO CN401
*1
R/R-Y
CN307
CN308
G/Y
CN309
CN310
B/B-Y
CN311
CN312
SYNC
CN313
CN314
STD
*1
*2
NOT USED
D1, D2 (OPTION)
NOT USED
TO CN402
TO CN409-2
TO CN402
TO CN403
TO CN404
TO CN408-1
TO CN408-3
TO CN409-1
TO CN409-3
CA905
ST-902484
CN411
CN315
REM
1 GND
2 16:9
3 TALLY
4 VIDEO/Y/C
5 VIDEO/AUX
6 VIDEO A/B
7 COLOR/MONO
8 DIGITAL
S-REM
CN316
1 REM in
2 +5V out
3 GND
D1
CN317
1 A/B
2 R-Y(D1)in
3 GND
4 Y(D1)in
5 GND
6 B-Y(D1)in
7 D1 enable
8 HD(D1)in
9 DIGITAL SELECT
10 VD(D1) in
11
12
D2
CN318
1 A/B
2 GND
3 VIDEO(D2) in
4
5 DIGITAL SELECT
6 +12V out
CN319
1 +150V in
2
3 +12V in
4 GND
5 +12V in
6 GND
7 H DRIVE
8 W/U
9 16:9/ 4:3
10 VD(DEF)in
11 ABL
12 V.DRIVE out
13 VDEF(C)
14 VSAW in
15 PROTECT
16 DEGAUSS ON/OFF
17 TALLY ON/OFF
18 FBP in
CA907 ST-902485A
L101 SFC-10(PAL ONLY)
CN201
1 +150V out
2
3 +12V out
4 GND
5 +12V out
6 GND
7 H DRIVE in
8 W/U
9 16:9/ 4:3
10 VD(DEF)out
11 ABL
12 V.DRIVE in
13 VDEF(C)
14 VSAW out
15 PROTECT
16 DEGAUSS ON/OFF
17 TALLY ON/OFF
18 FBP out
CN208
CN324
TEST
1 HUE
2 CHROMA
3 BRIGHTNESS
4 CONTRAST
5 G GAIN
6 B GAIN
7 R BKG.
CN325
CN207
1 GND
2
3
4 DEGAUSS ON
5
6 GND
7
8 +45V out
9 GND
10 GND
11
12 +15V out
13 +150V out
14 +130V out
CA910 ST-902620
CN205
1 GND
2
3
4 DEGAUSS ON
5
6 GND
7
8 +45V in
9 GND
10 GND
11
12 +15V in
13 +150V in
14 +130V in
CN920
1 AC in
2
3 AC in
CN921
1 DEGAUSS
2 DEGAUSS
FUSE: ASG3-4 (USA/JPN)
EAK4A-T (EUR)
FUSE CAP: FEK031-1661 (USA/JPN)
FEK031-1663 (EUR)
F101
FEU031-1673
S101
ESB-90702V
*2
60-9090-303
-108-005
AC in
L
N
CN101
SUP-D3G-E
(CHASSIS GND)
1
2
3
4
5
6
7
8



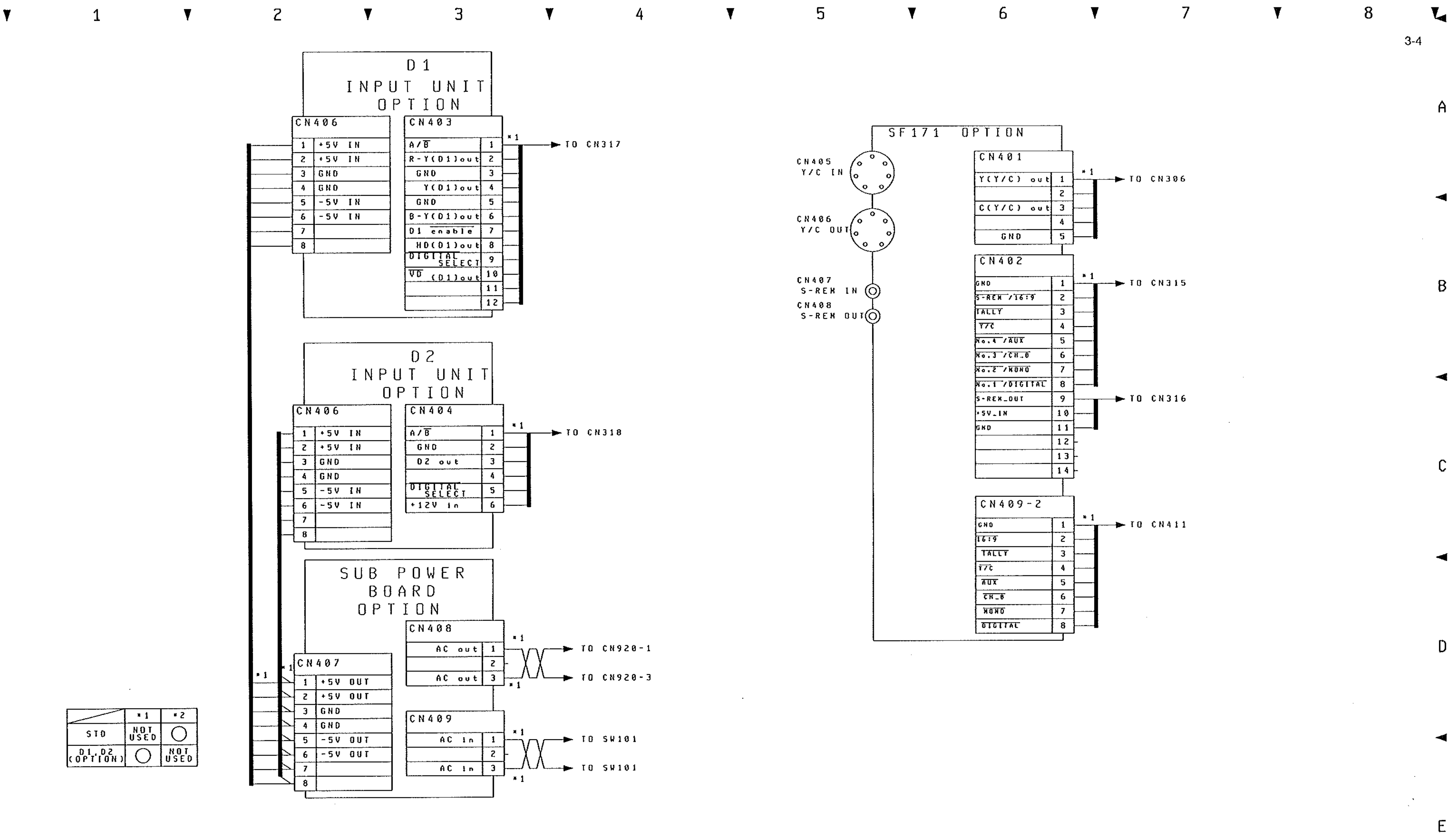
TM24-17R/RP
MAIN CHASSIS(1/2)
(CRT SOCKET BOARD)
Schematic Diagram
C11-904837



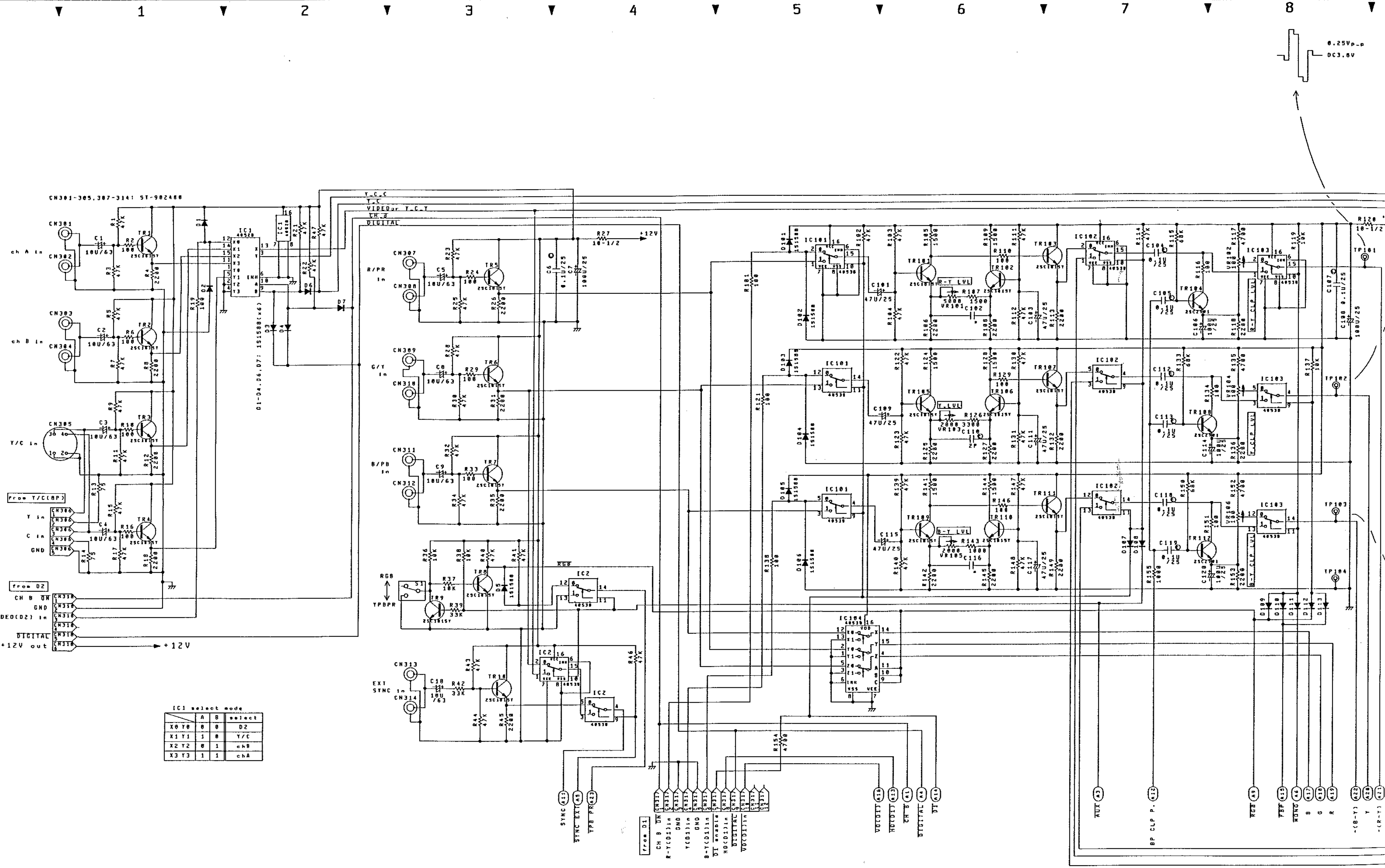
1 2 3 4 5 6 7 8
CH A
CN301
CN302
CH B
CN303
CN304
Y/C
CN305
CN306
Y/C
1 Y(Y/C) in
2
3 C(Y/C) in
4
5 GND
TO CN401
R/R-Y
CN307
CN308
G/Y
CN309
CN310
B/B-Y
CN311
CN312
SYNC
CN313
CN314
STD
*1
*2
NOT USED
D1,D2 (OPTION)
NOT USED
TO CN402
TO CN409-2
TO CN402
TO CN403
TO CN404
TO CN408-1
TO CN408-3
TO CN409-1
TO CN409-3
CA905
ST-902484
CN411
CN315
REM
1 GND
2 16:9
3 TALLY
4 VIDEO/Y/C
5 VIDEO/AUX
6 VIDEO A/B
7 COLOR/MONO
8 DIGITAL
S-REM
CN316
REM in
+5V out
GND
D1
CN317
A/B
R-Y(D1)in
GND
Y(D1)in
GND
B-Y(D1)in
D1 enable
HD(D1)in
DIGITAL SELECT
VD(D1) in
D2
CN318
A/B
GND
VIDEO(D2) in
DIGITAL SELECT
+12V out
VIDEO BOARD
CN324
TEST
HUE
CHROMA
BRIGHTNESS
CONTRAST
G GAIN
B GAIN
R BKG.
CN325
CN319
+150V in
+12V in
GND
+12V in
GND
H DRIVE out
W/U
16:9 /4:3
VD(DEF)in
ABL
V.DRIVE out
VDEF(C)
VSAW in
PROTECT
DEGAUSS ON/OFF
TALLY ON/OFF
FBP in
CA907 ST-902615
L101 SFC-10(PAL ONLY)
CN201
+150V out
+12V out
GND
+12V out
GND
H DRIVE in
W/U
16:9 /4:3
VD(DEF)out
ABL
V.DRIVE out
VDEF(C)
VSAW out
PROTECT
DEGAUSS ON/OFF
TALLY ON/OFF
FBP out
CN208
FUSE: ASG3-4 (USA/JPN)
EAK4A-T (EUR)
FUSE CAP: FEK031-1661 (USA/JPN)
FEK031-1663 (EUR)
AC in
CN101
SUP-D3G-E
(CHASSIS GND)
F101
FEU031-1673
S101
ESB-90702V
*2
60-9090-303
-108-005
POWER BOARD
CN920
1 AC in
2
3 AC in
CN921
DEGAUSS
DEGAUSS
CN207
GND
DEGAUSS ON
GND
+45V out
GND
GND
+15V out
+150V out
+130V out
CA910 ST-902620
CN205
GND
DEGAUSS ON
GND
+45V in
GND
GND
+15V in
+150V in
+130V in
DEF&HV BOARD



TM32-17P
MAIN CHASSIS(1/2)
(CRT SOCKET BOARD)
Schematic Diagram
C11-904838

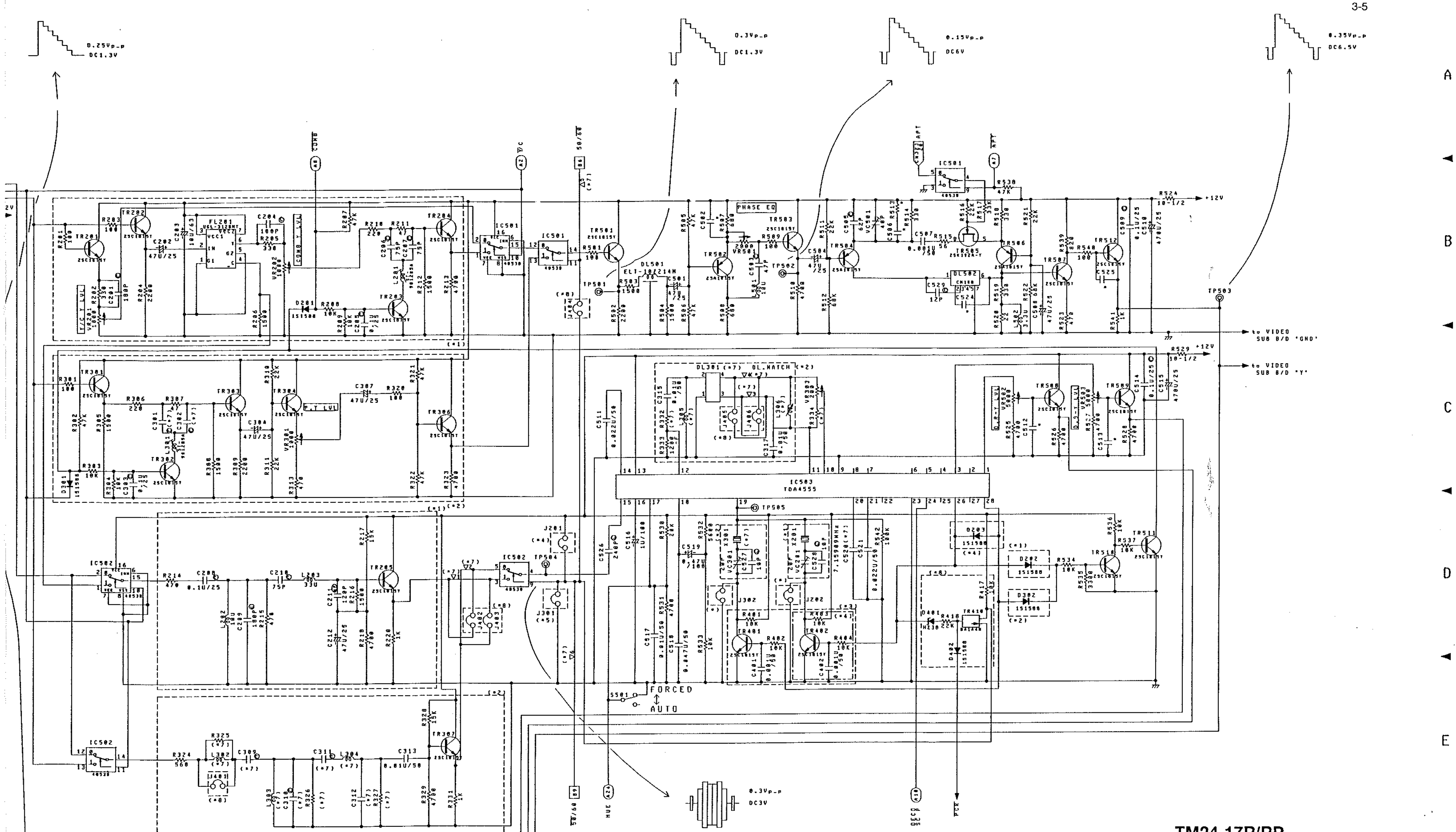


TM24-17R/RP
TM32-17/P
MAIN CHASSIS(2/2)
Schematic Diagram
C3-904846



IC1 select mode

	A	B	select
X0 Y0	0	0	D2
X1 Y1	1	0	Y/C
X2 Y2	0	1	chB
X3 Y3	1	1	chA



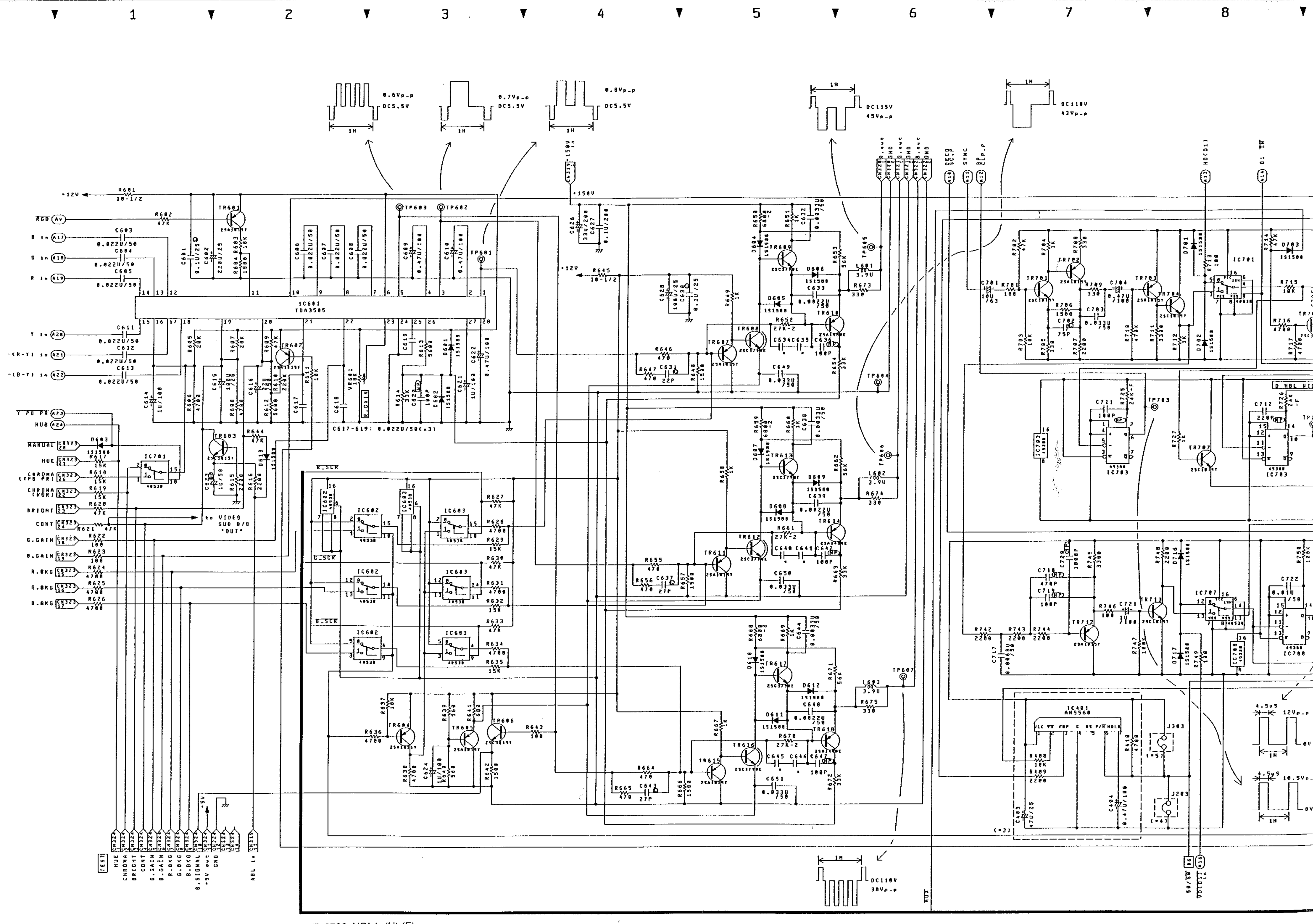
(*7)MARK PARTS   X:NOT USED

MODE	R325	R326	R327	R332	R334	C301	C302	C309	C310	C311	C312	L302	L303	C520
STD	6800	3300	560	390	180-F	47P	47P	27P	240P	30P	39P	39u	4.7u	0.022U
PAL-N	X	560	1500	560	360-F	75P	75P	100P	180P	75P	150P	X	10u	0.056U

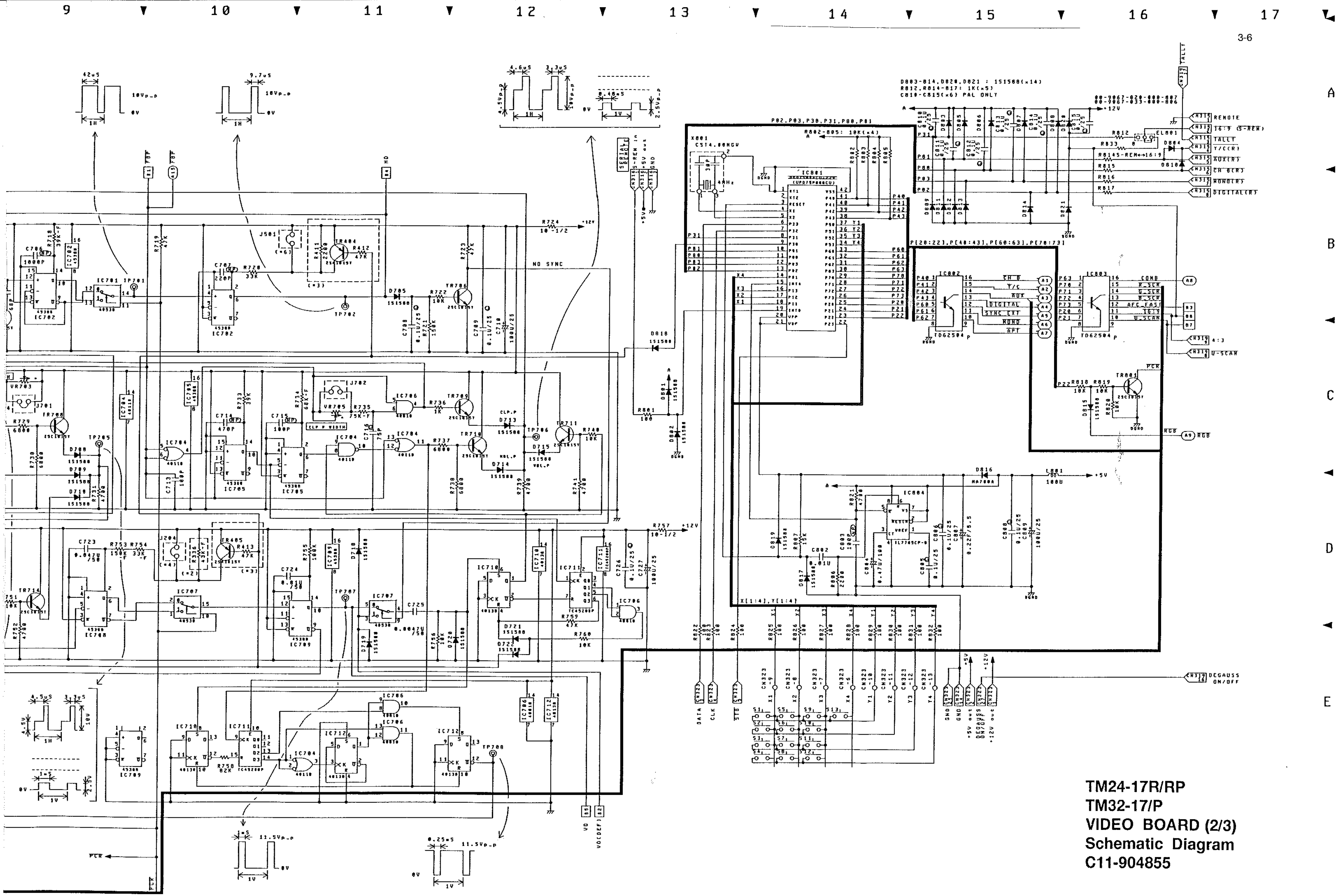
MODE	L304	L305	L306	DL301	X301	∇1~6MARK
STD	56u	8.2u	P-0R2	EFD-EN645A11	8.867238MHz	———
PAL-N	33u	15u	P-150	EFD-EN645B23A	7.151223MHz	CUT

MODE	(*8)MARK PARTS
STD	NOT USED
PAL-N	USED

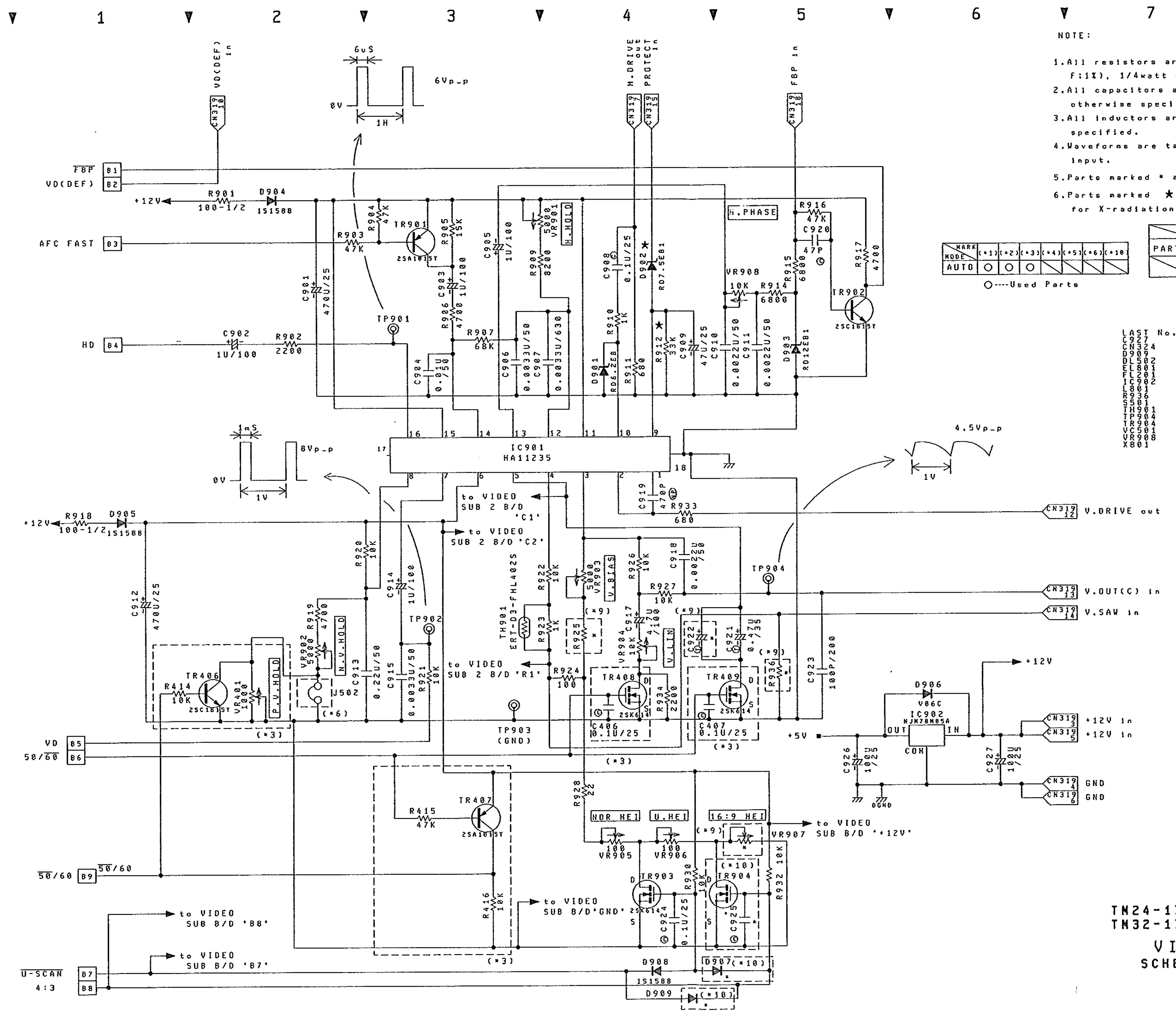
TM24-17R/RP
TM32-17/P
VIDEO BOARD (1/3)
Schematic Diagram
C11-904854



1
2
3
4
5
6
7
8
IC601
TDA3505
IC701
IC602
IC603
IC401
AN5560
IC703
IC707
IC708
TR601
TR602
TR603
TR604
TR605
TR606
TR607
TR608
TR609
TR610
TR611
TR612
TR613
TR614
TR615
TR616
TR617
TR618
TR701
TR702
TR703
TR704
TR707
TR712
TR713
+12V
+150V
RGB
B in
G in
R in
Y in
-(R-Y) in
-(B-Y) in
Y PB PR
HUB
MANUAL
HUE
CHROMA
BRIGHT
CONT
G.GAIN
B.GAIN
R.BKG
G.BKG
B.BKG
to VIDEO SUB B/D "OUT"
R_SCR
G_SCR
B_SCR
TP601
TP602
TP603
TP604
TP605
TP606
TP607
TP703
0.6Vp-p
DC5.5V
0.7Vp-p
DC5.5V
0.8Vp-p
DC5.5V
1H
DC115V
45Vp-p
DC110V
43Vp-p
DC110V
38Vp-p
4.5μS
12Vp-p
10.5Vp-p
0V
C617-619: 0.022U/50(×3)
TEST
ABL in
SYNC
J303
J203



TM24-17R/RP
TM32-17/P
VIDEO BOARD (2/3)
Schematic Diagram
C11-904855



NOTE:

1. All resistors are in ohms 5%(parts marked F;1%), 1/4watt unless otherwise specified.
2. All capacitors are in Farads, 25V unless otherwise specified.
3. All inductors are in Henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

MARK / MODE	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*10)
AUTO	○	○	○				

○----Used Parts

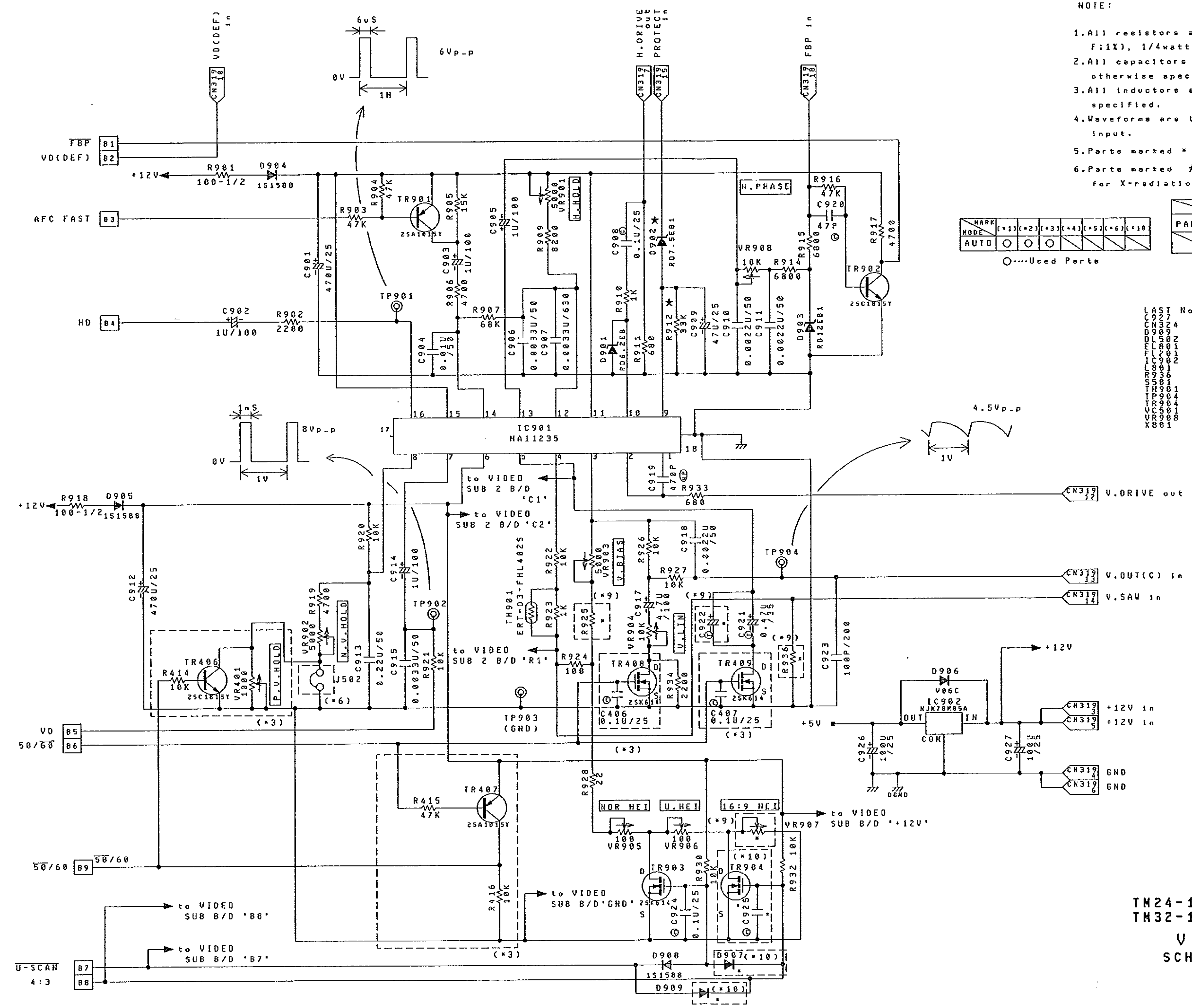
	(*9)MARKED PARTS			
PARTS	R925	C922	R936	VR907
	1K	0.33U /35	2.2-2	SHORT

LAST No.	LOST No.	
C927	C11..C100	R312
CN324	C121..C200	R314..R319
D909	C213..C300	R330
DL502	C305..C306	R335
EL801	C308	R337..R400
FL201	C314	R405..R407
IC902	C316	R419..R500
L801	C318..C400	R543..R600
R936	C405	R644
S501	C408..C500	R676..R700
TH901	C522..C523	R728
TP904	C530..C600	R732
TR904	C625	R761..R800
VC501	C629	R808..R811
VR908	C652..C700	R813
X801	C713	R834..R900
	C728..C801	R908
	C810..C900	R913
	CN3..CN300	R929
	D8..D100	R931
	D114..D200	R935
	D204..D300	S14..S500
	D303..D400	TH1..TH900
	D403..D600	TP1..TP100
	D613..D700	TP105..TP500
	D704	TP506..TP600
	D706..D707	TP608..TP700
	D711..D712	TP709..TP900
	D723..D800	TR11..TR100
	D822..D900	TR113..TR200
	DL1..DL300	TR206..TR300
	DL302..DL500	TR305
	EL1..EL800	TR308..TR400
	FL1..FL200	TR403
	IC3..IC100	TR411..TR500
	IC105..IC400	TR513..TR600
	IC402..IC500	TR619..TR700
	IC504..IC600	TR715..TR800
	IC604..IC700	TR802..TR900
	IC713..IC800	VC1..VC200
	IC805..IC900	VC202..VC300
	L1..L200	VC302..VC500
	L204..L300	VR1..VR100
	L307..L500	VR107..VR200
	L503..L600	VR203..VR300
	L604..L800	VR302
	R20	VR304..VR400
	R48..R100	VR402..VR500
	R156..R200	VR504..VR600
	R219	VR602..VR702
	R221..R300	VR704
		VR706..VR900
		X1..X200
		X202..X300
		X302..X800

TM24-17R/RP
TM32-17/P COLOR MONITOR

VIDEO BOARD SCHEMATIC DIAGRAM 3/3

C3-904856



NOTE:

1. All resistors are in ohms 5%(parts marked F:1%), 1/4watt unless otherwise specified.
2. All capacitors are in Farads, 25V unless otherwise specified.
3. All inductors are in Henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

MARK / MODE	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*10)
AUTO	○	○	○				

○----Used Parts

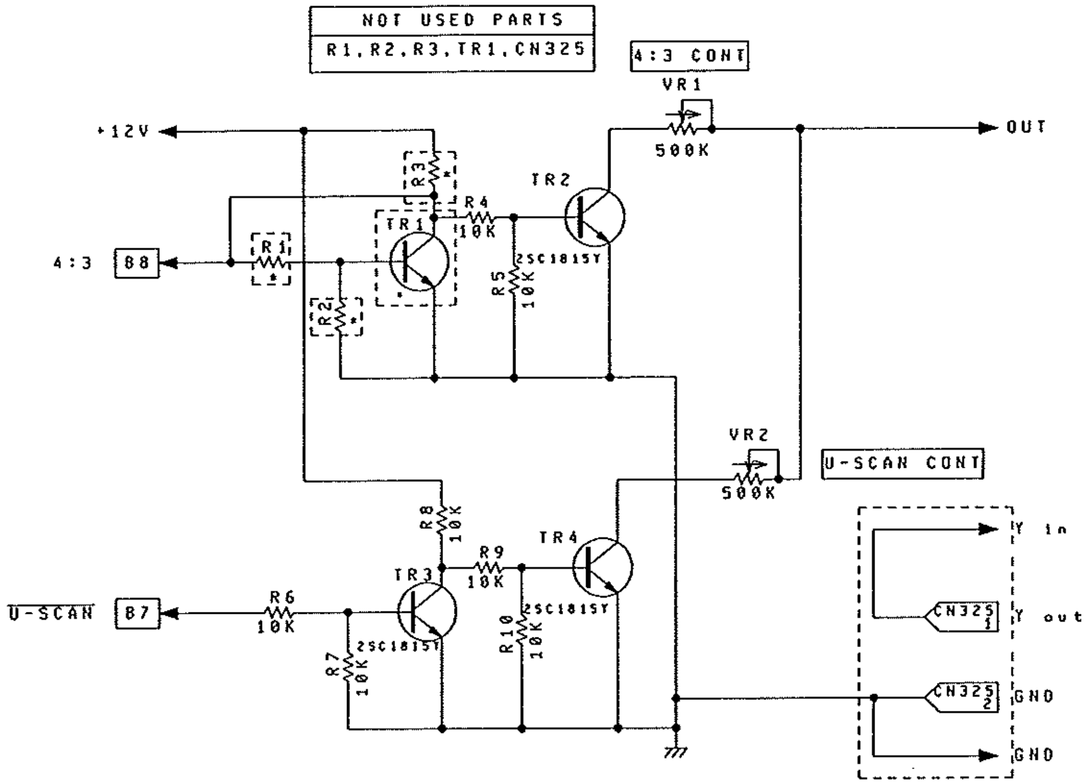
	(*9)MARKED PARTS			
PARTS	R925	C922	R936	VR907
	1K	0.33U/35	2.2-2	SHORT

LAST No.	LOST No.	
C927	C11..C100	R312
CN324	C121..C200	R314..R319
D909	C213..C300	R330
DL502	C305..C306	R335
EL801	C308	R337..R400
FL201	C314	R405..R407
IC902	C316	R419..R500
L801	C318..C400	R543..R600
R936	C405	R644
S501	C408..C500	R676..R700
TH901	C522..C523	R728
TP904	C530..C600	R732
TR904	C625	R761..R800
VC501	C629	R808..R811
VR908	C652..C700	R813
X801	C713	R834..R900
	C728..C801	R908
	C810..C900	R913
	CN3..CN300	R929
	D8..D100	R931
	D114..D200	R935
	D204..D300	S14..S500
	D303..D400	TH1..TH900
	D403..D600	TP1..TP100
	D613..D700	TP105..TP500
	D704	TP506..TP600
	D706..D707	TP608..TP700
	D711..D712	TP709..TP900
	D723..D800	TR11..TR100
	D822..D900	TR113..TR200
	DL1..DL300	TR206..TR300
	DL302..DL500	TR305
	EL1..EL800	TR308..TR400
	FL1..FL200	TR403
	IC3..IC100	TR411..TR500
	IC105..IC400	TR513..TR600
	IC402..IC500	TR619..TR700
	IC504..IC600	TR715..TR800
	IC604..IC700	TR802..TR900
	IC713..IC800	VC1..VC200
	IC805..IC900	VC202..VC300
	L1..L200	VC302..VC500
	L204..L300	VR1..VR100
	L307..L500	VR107..VR200
	L503..L600	VR203..VR300
	L604..L800	VR302
	R20	VR304..VR400
	R48..R100	VR402..VR500
	R156..R200	VR504..VR600
	R219	VR602..VR702
	R221..R300	VR704
		VR706..VR900
		X1..X200
		X202..X300
		X302..X800

TM24-17R/RP
TM32-17/P COLOR MONITOR

VIDEO BOARD
SCHEMATIC DIAGRAM 3/3

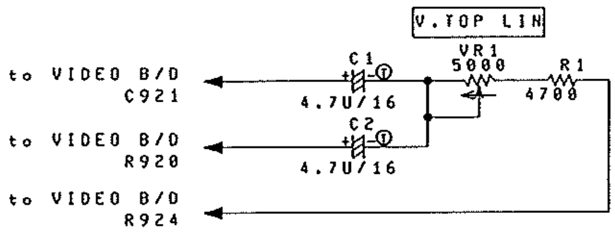
C3-904856



TM24-17R/RP
TM32-17/P
VIDEO SUB BOARD (1/1)
Schematic Diagram
C4-904841

A

B

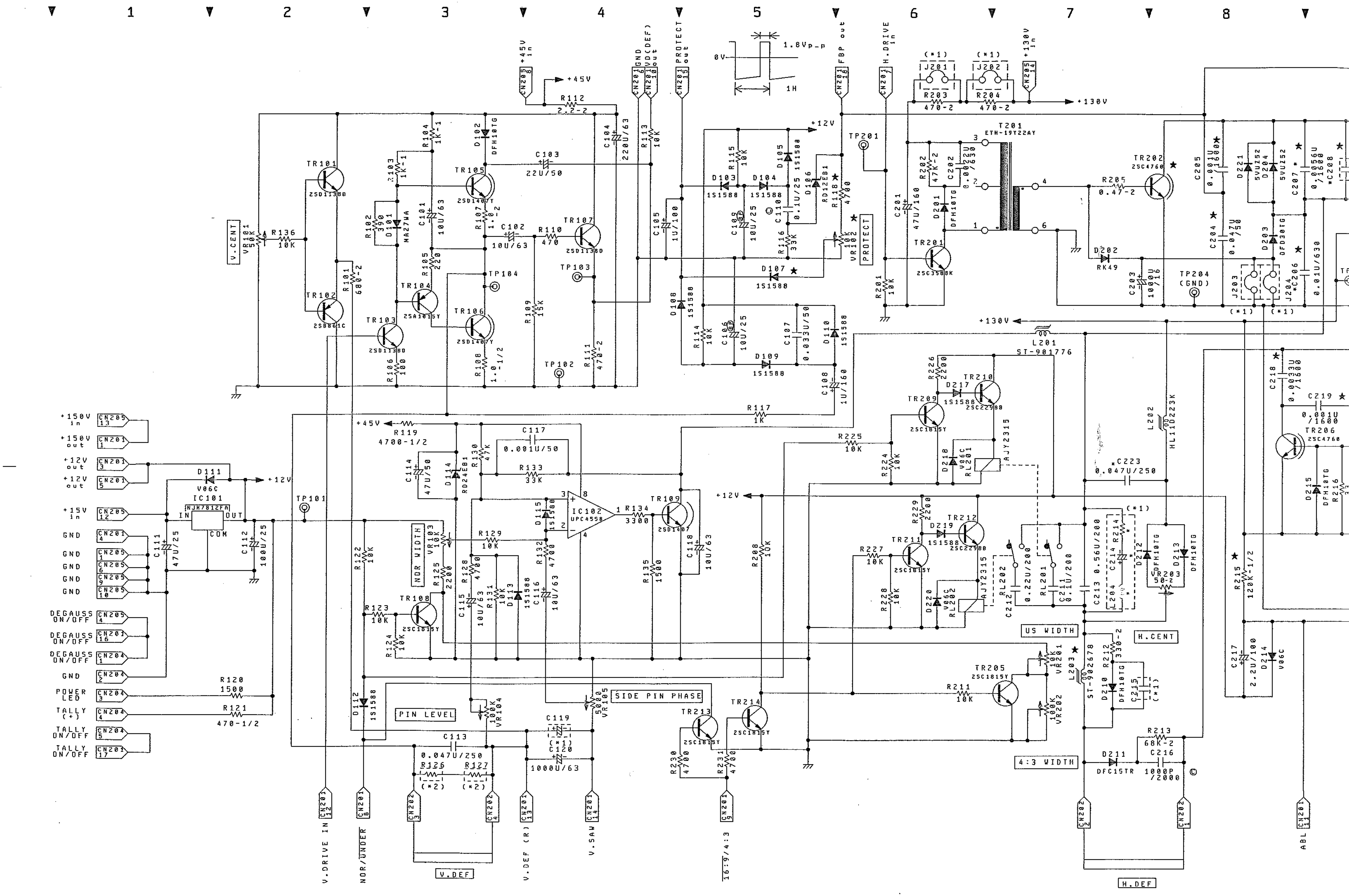


C

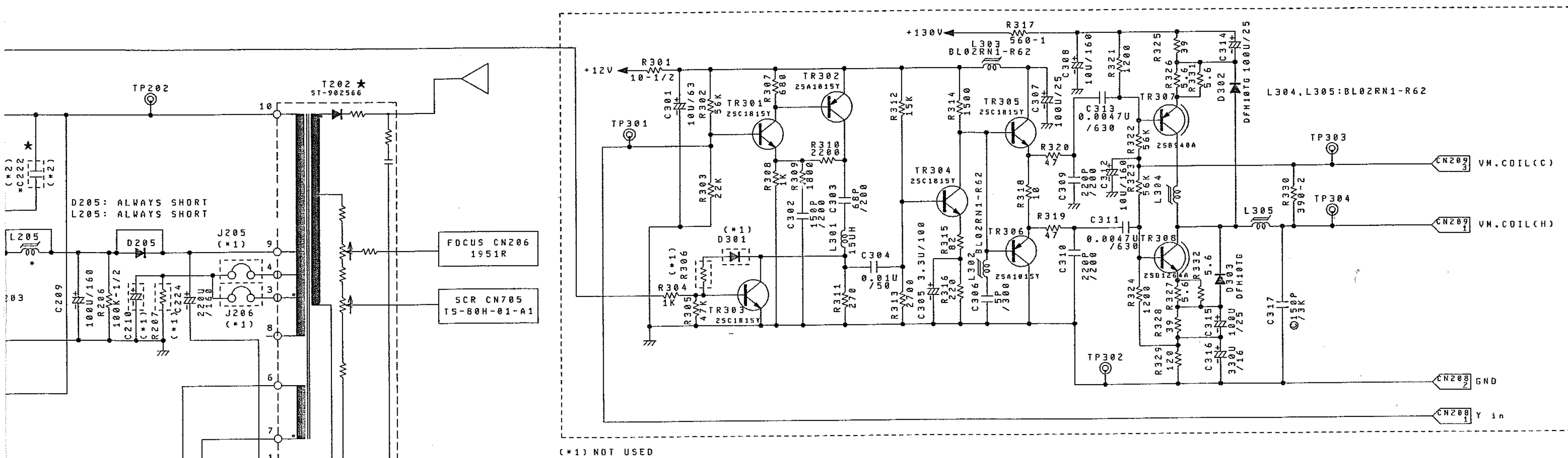
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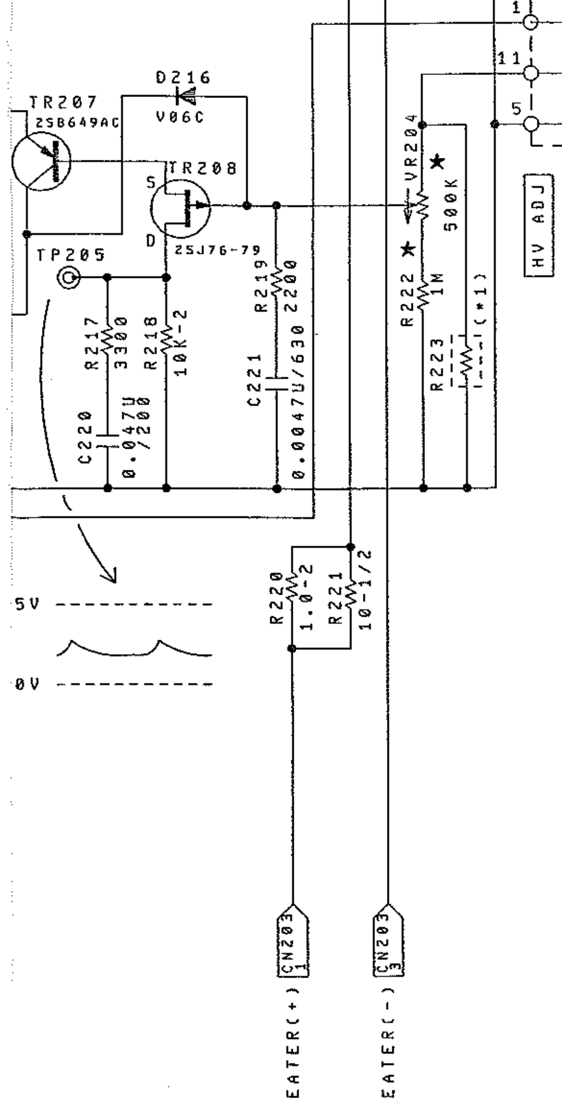
E

TM24-17R/RP
TM32-17/P
VIDEO SUB2 BOARD (1/1)
Schematic Diagram
C4-904990



V.CENT
NOR WIDTH
PIN LEVEL
SIDE PIN PHASE
US WIDTH
H.CENT
4:3 WIDTH
V.DEF
H.DEF
PROTECT
V.DRIVE IN
NOR/UNDER
V.DEF (R)
V.SAW
16:9/4:3
ABL

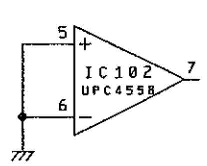




CN201: DF1B-18DP-2.5DSA
CN203: DF1B-3P-2.5DSA
CN204: DF1B-5P-2.5DSA
CN205: DF1-14P-2.5DSA
CN208: DF1-2P-2.5DSA
CN209: DF1-3P-2.5DSA

(*1)MARK PARTS:NOT USED				
J201	J206	C119	R306	C214
J202	J205	C215	J203	R214
D202	R207	R223	J204	
C203	C210	D301	L204	

(*2)MARK PARTS		
	TM32-17	TM24-17R
R126	470-1/2	330-1/2
R127	100-1/2	75-1/2
C208	0.001U/1600	0.0027U/1600
C222	0.0015U/1600	————



LAST No.	LOST No.
C317	C1..C100
CN209	C121..C200
D303	C225..C300
IC102	CN1..CN200
J206	CN202
L305	CN206..CN207
R332	D1..D100
RL202	D116..D200
S3	D206..D209
T202	D222..D300
TP304	IC1..IC100
TR308	J1..J202
VR203	L1..L200
	L206..L300
	R1..R100
	R137..R200
	R209..R210
	R232..R300
	RL1..RL200
	T1..T200
	TP1..TP100
	TP105..TP200
	TP206..TP300
	TR1..TR100
	TR110..TR200
	TR203..TR204
	TR215..TR300
	VR2..VR100
	VR106..VR200

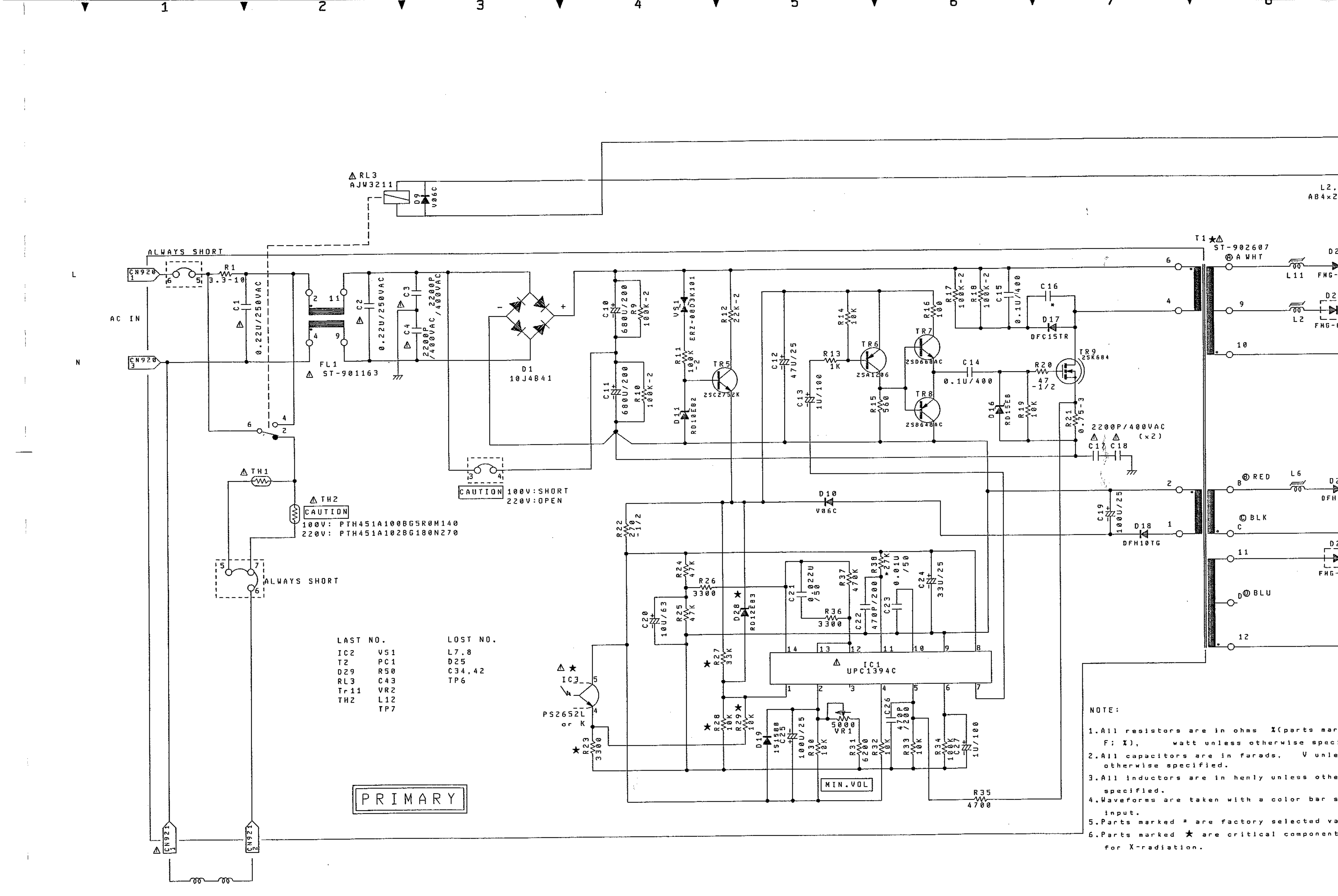
NOTE:

1. All resistors are in ohms %(parts marked F: %), watt unless otherwise specified.
2. All capacitors are in farads. V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

TM24-17R/RP
TM32-17/P COLOR MONITOR

DEF&HV BOARD
SCHEMATIC DIAGRAM 1/1

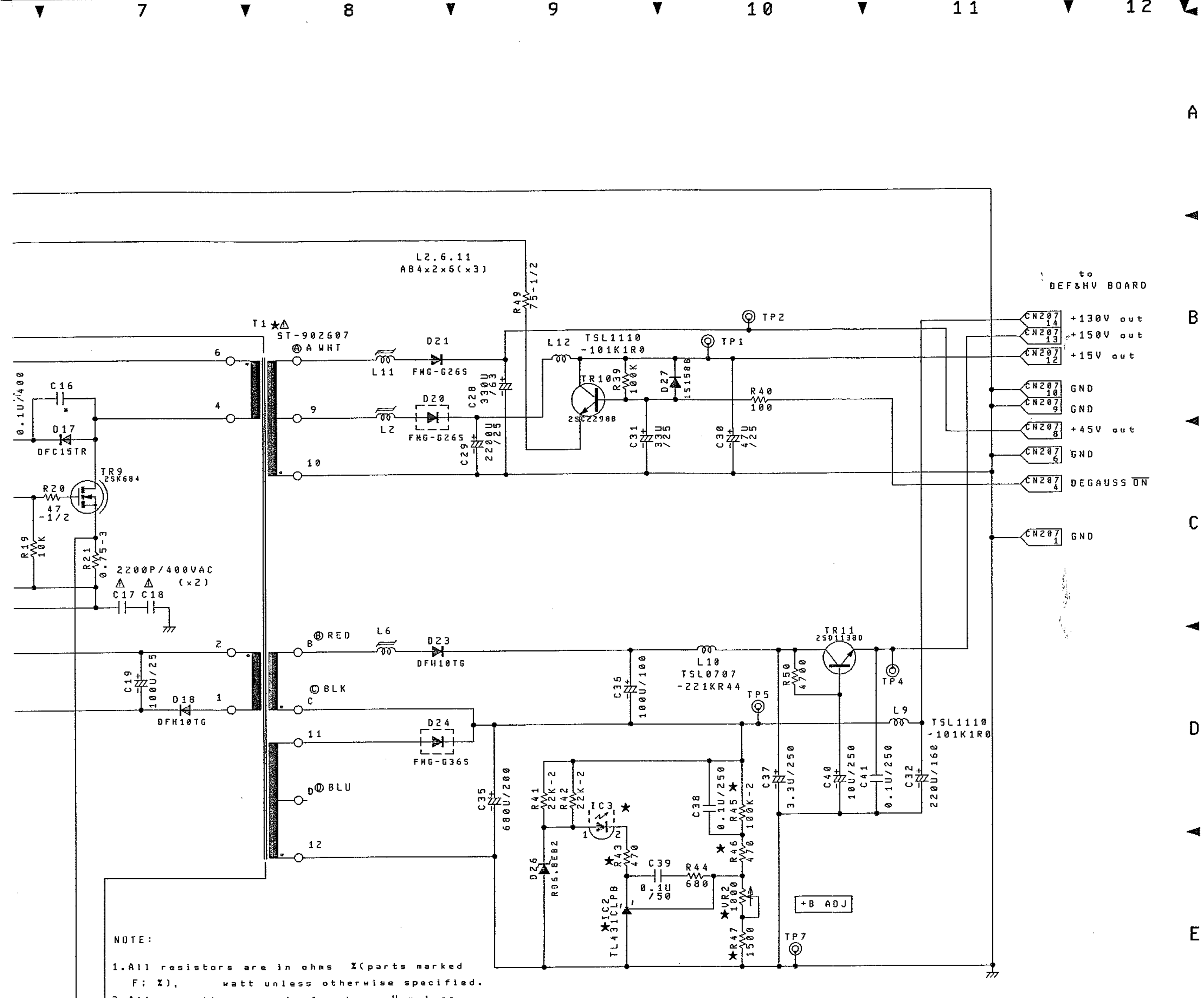
C11-904828



LAST NO.		LOST NO.
IC2	VS1	L7.8
T2	PC1	D25
D29	R50	C34,42
RL3	C43	TP6
Tr11	VR2	
TH2	L12	
	TP7	

NOTE:

1. All resistors are in ohms %(parts marke F: %), watt unless otherwise specifi
2. All capacitors are in farads, V unless otherwise specified.
3. All inductors are in henly unless otherw specified.
4. Waveforms are taken with a color bar sig input.
5. Parts marked # are factory selected valu
6. Parts marked ★ are critical components for X-radiation.

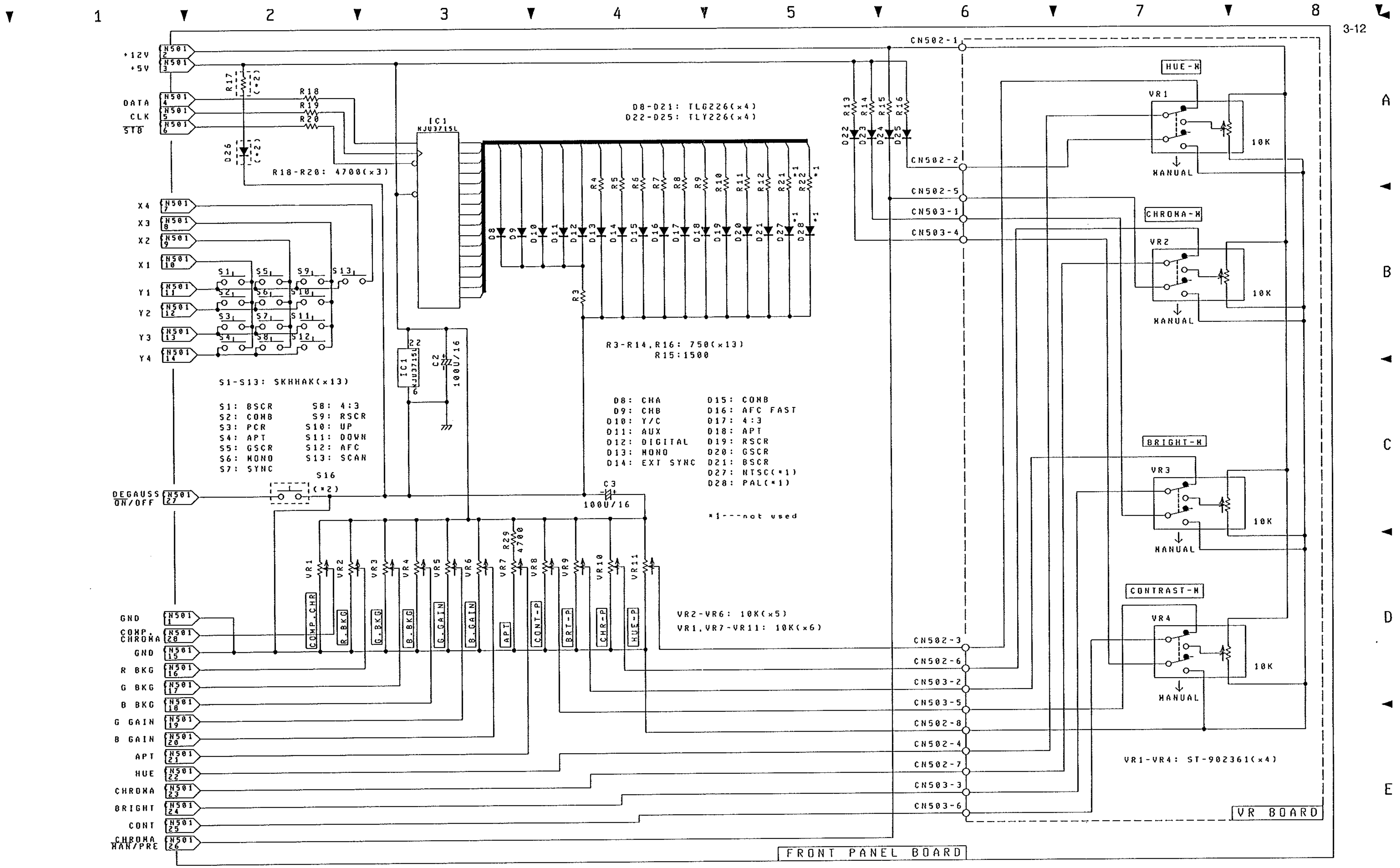


NOTE:

1. All resistors are in ohms %(parts marked F; %), watt unless otherwise specified.
2. All capacitors are in farads, V unless otherwise specified.
3. All inductors are in henly unless otherwise specified.
4. Waveforms are taken with a color bar signal input.
5. Parts marked * are factory selected value.
6. Parts marked ★ are critical components for X-radiation.

TM24-17R/RP
TM32-17/P COLOR MONITOR
POWER BOARD
SCHEMATIC DIAGRAM 1/1

C21-904827



	(*2) MARK PARTS	
	TM32-17/P	TM24-17R/RP
S16	SHORT	SKHHAK
D26	NOT USED	SLP-274B
R17	NOT USED	750

TM24-17R/RP
TM32-17/P
FRONT PANEL / VR BOARD (1/1)
Schematic Diagram
C3-904853

4. PARTS LIST （部品表）

NOTICE

1. When touching the following parts, pay special attention.
   CMOS IC, delay line, X'tal oscillator, transformer
2. Parts marked with ※ are for adjustment use.
3. Parts marked with ★ have important factors against X-ray radiation.
4. All the parts may be subject to change for further improvement.

注意

1. 下記の部品に触れる場合は、十分に注意を払ってください。
   CMOS IC、ディレーライン、水晶発振子、トランス
2. ※印の付いた部品は調整用です。
3. ★印の付いた部品はX線放射に対して重要な要因を持った部品です。
4. すべての部品は性能の向上により、無断で変更することがあります。

- PARTS NO.
  Part No. shown in the schematic diagram.
- DESCRIPTION
  Type designation of parts
- MFD.
  Company name (See below.)
- PARTS-CODE
  Parts registration number

- PARTS NO.
  接続図に示されている部品番号
- DESCRIPTION
  品名
- MFD.
  会社名（下を参照）
- PARTS-CODE
  部品登録番号

AGT	AUGAT INC.	U.S.A.
ALP	ALPS ELECTRIC CO.,LTD.	Japan
AMP	AMP, Ltd.	apan
ANA	Analog Devices,Inc.	U.S.A.
ASA	ASAHI ELECTRONICS INC.	Japan
BEC	Beckman Industrial	U.S.A.
COS	TOKYO COSMOS ELECTRIC CO.,LTD.	Japan
CPL	COPAL ELECTRONICS CO.,LTD.	Japan
DDK	DAI-ICHI DENSHI KOGYO K.K.	Japan
DIT	DONG IL TECHNOLOGY LTD.	Korea
ELC	Elco International K.K.	Japan
EMD	EMUDEN MUSEN KOGYO CO.,LTD.	Japan
FDK	Fuji Electrochemical Co.,Ltd.	Japan
FJE	Fuji Electric Co.,Ltd.	Japan
FJS	Fujisoku Electric Co.,Ltd.	Japan
FJT	FUJITSU LIMITED	Japan
FKD	Fukuda S.S	Japan
FKK	Fujimoto Kinzoku Co.,Ltd.	Japan
FOS	FOSTER ELECTRIC CO.,LTD.	Japan
HDK	HOKURIKU ELECTRIC INDUSTRY CO.,LTD.	Japan
HIM	HEINEMANN ELECTRIC COMPANY	U.S.A.
HIR	HIROSE ELECTRIC CO.,LTD.	Japan
HIT	Hitachi,Ltd.	Japan
HSD	Hosiden Electronics Co.,Ltd.	Japan
HRA	HIRAKAWA ELECTRIC WIRE MFG.CO.,LTD.	Japan
HRN	HARUNA DENSHI co.,ltd.	Japan
IKE	Ikegami Tsushinki Co.,Ltd.	Japan
ISI	Ishizuka Electronics Corporation	Japan
IWT	IWATSU SEIMITSU CO.,LTD.	Japan
JAE	JAPAN AVIATION ELECTRONICS IND.LTD	Japan
JFC	JAPAN FINE CHEMICAL CORP.	Japan
KCK	KCK CO.,LTD.	Japan
KDK	KAWASAKI ELECTRIC WIRE CO.,LTD.	Japan
KEL	KEL CORPORATION	Japan
KIN	KINSEKI,LIMITED	Japan
KMY	KAMAYA ELECTRIC CO.,LTD.	Japan
KOA	KOA CORPORATION	Japan
KYC	KYOCERA CORPORATION	Japan
LTL	LITTELFUSE	U.S.A.
MAC	MAC EIGHT Co.,Ltd.	Japan
MAR	MARCON ELECTRONICS CO.,LTD.	Japan
MAT	Matsushita Electric Industrial Co.,Ltd.	Japan
MIZ	MIZUTANI ELECTRIC IND.CO.,LTD.	Japan
MMD	MORIMATSU CO.,LTD.	Japan
MMM	SUMITOMO 3M CO.LTD	Japan
MOT	MOTROLA INC	U.S.A.
MUR	MURATA MFG.CO.,LTD.	Japan
NAT	JAPAN SOLDERLESS TERMINAL MFG. CO.,LTD.	Japan
NBL	NOBLE MUSEN CO.,LTD.	Japan
NCC	MATSUO ELECTRIC CO.,LTD.	Japan
NCH	NIPPON CHEMI-CON CORPORATION	Japan
NEC	NEC Corporation	Japan
NHK	NIHON HODEN KENKYUSHO	Japan
NKA	NIHON KAIHEIKI IND.CO.,LTD.	Japan
NKM	NIKKOHM CO.,LTD.	Japan
NMO	Nihon Molex	Japan
NOB	TEIKOKU TSUSHIN KOGYO CO.,LTD.	Japan
NSC	National Semiconductor Corporation	U.S.A.
OEL	OSHINO ELECTRIC LAMP WORKS,LTD.	Japan
OKA	OKAYA ELECTRIC INDUSTRIES CO.,LTD.	Japan
OMR	OMRON Corporation	Japan
PRM	PRECI-DIP S.A.	Swiss
QQQ	CHUOMUSEN CO.,LTD.	Japan
RYO	Ryosan Company,Limited	Japan
SAT	SATO PARTS CO.,LTD.	Japan
SCH	SCHURTER	Swiss
SCS	SAITO CORD MFG.CO.,LTD.	Japan
SIN	SHINYEI KAISHA	Japan
SKK	Sinetsu Kagaku Kogyo Co.,Ltd.	Japan
SKN	SANKEN ELECTRIC CO.,LTD.	Japan
SKO	Sankosha	Japan
SMK	SMK Corporation	Japan
SON	Sony Corporation.	Japan
SOS	SOSHIN ELECTRIC CO.,LTD.	Japan
SRP	Sharp Corporation	Japan
SSM	SUSUMU CO.,LTD.	Japan
STL	STANLEY ELECTRIC CO.,LTD.	Japan
SUD	SUMIDA ELECTRIC CO.,LTD.	Japan
SWC	SHOWA ELECTRIC WIRE & CABLE CO.,LTD.	Japan
SYO	SANYO ELECTRIC CO.,LTD.	Japan
TAD	TAIKO DENKI CO.,LTD.	Japan
TAJ	TAJIMI ELECTRONICS CO.,LTD.	Japan
TAM	TAMA ELECTRIC Co.,Ltd.	Japan
TDK	TDK Corporation	Japan
TEL	TODAI ELECTRIC LTD.	Japan
TEX	TEXAS INSTRUMENTS	U.S.A.
TKO	TOKO,INC.	Japan
TND	TANAKA ELECTRONICS IND.CO.,LTD.	Japan
TOK	TOKAI COMMUNICATION INDUSTRY CO.,LTD.	Japan
TOS	TOSHIBA CORPORATION.	Japan
TYO	TAIYO TSUSHIN KOGYO K.K.	Japan
YTD	YAMATE ELECTRIC CO.,LTD.	Japan

4.1 MAIN CHASSIS

• MAIN CHASSIS(COMMON) Parts List

MAIN CHASSIS(COMMON) 9052-15530 PP-905253 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< SWITCHES >			
S101	ESB-90702V	MAT	10-34323-00201
< CONNECTORS >			
CN101	SUP-D3G-E	OKA	10-43548-00400
CN202	60-9090-304-108-005	ELC	10-30508-23040
CN920	60-9090-303-108-005	ELC	10-30508-23030
< FUSES >			
F101	FEU031-1673	SCH	10-53505-00100
< OTHERS >			
CA904	ST-902614	HIR	10-66995-26140
CA905	ST-902484	HIR	10-66995-24840
CA908	ST-902619	HIR	10-66995-26190
CA910	ST-902620	HIR	10-66995-26200

• MAIN CHASSIS(EUR) Parts List

MAIN CHASSIS(EUR) 99052-15540 PP-905254 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< INDUCTANCE COILS >			
L101	SFC-10	KGK	10-40562-00500
< FUSES >			
F101	EAK 4A-T	LTL	10-53002-00500
	FEK031-1663	SCH	10-53504-00200

• MAIN CHASSIS(U.J) Parts List

MAIN CHASSIS(U.J) 99052-15550 PP-905255 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< FUSES >			
F101	ASG3-4	FKD	10-53008-00400
	FEK031-1661	SCH	10-53504-00100

• MAIN CHASSIS(24") Parts List

MAIN CHASSIS(24") 99053-15730 PP-905373 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< CRT >			
V901	W56LCZ696X	TOS	
< INDUCTANCE COILS >			
L102	ST-902601	IKE	10-40985-26010
< OTHERS >			
CA901	ST-902487	HIR	10-66995-24870
CA902	ST-902488	HIR	10-66995-24880
CA903	ST-902489	HIR	10-66995-24890
CA907	ST-902485A	HIR	10-66995-24850

• MAIN CHASSIS(32") Parts List

MAIN CHASSIS(32") 99053-15740 PP-905374 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< CRT >			
V901	W76KYR690X	TOS	
< INDUCTANCE COILS >			
L102	ST-902567 REV2	IKE	10-40985-25670
< OTHERS >			
CA901	ST-902616	HIR	10-66995-26160
CA902	ST-902617	HIR	10-66995-26170
CA903	ST-902618	HIR	10-66995-26180
CA906	ST-902491	HIR	10-66995-24910
CA907	ST-902615	HIR	10-66995-26150

4.2 LED BOARD

• 24"LED BOARD Parts List

24"LED BOARD 94058-15050 PP-904957 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< DIODES >				< OTHERS >			
D 1	GL1HD111	SRP	10-03181-00803				
D 2	GL1HD111	SRP	10-03181-00803	CA909	ST-902496A	HIR	10-66995-24960

• 32 " LED BOARD Parts List

32" LED BOARD 99053-15750 PP-905375 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< DIODES >							
				< OTHERS >			
D 1	GL1HD111	SRP	10-03181-00803				
D 2	GL1HD111	SRP	10-03181-00803	CA909	ST-902624	HIR	10-66995-26240

4.3 ACCESSORY

• ACCESSORY (COMMON) Parts List

ACCESSORY (COMMOM) 99058-15071 PP-904994 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< OTHERS >							
	S-1608A HIR		10-30391-00200				
	P-1608A-C-20	HIR	10-30331-00100				

• ACCESSORY 3 (EUR) Parts List

ACCESSORY 3 (EUR) 99053-15780 PP-905378 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< OTHERS >							
	KP-4819D KS-31A GTCE-3 2M	KWD	10-66603-002				
	SFC-8	KGK	10-40562-00400				

• ACCESSORY 1 (JPN) Parts List

ACCESSORY 1 (JPN) BOARD 94058-15072 PP-905038 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< OTHERS >							
	VFF0.75SQX2 2.5M ﾊｲﾛ	SCS	10-66604-02000				

• ACCESSORY 2 (USA) Parts List

ACCESSORY 2 (USA) 94058-15073 PP-905039 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< OTHERS >							
	KP-30.SJT/18AWG.KS-16A8FT	KWD	10-66603-001				

4.4 CRT SOCKET

• CRT SOCKET BOARD Parts List

CRT SOCKET BOARD 94058-15130 PP-904952 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< RESISTORS >				< TEST POLES >			
R 1	ERDS2TJ 101 T	MAT	10-12108-10113	* TP 1			
R 2	ERDS2TJ 101 T	MAT	10-12108-10113	* TP 2			
R 3	ERDS2TJ 101 T	MAT	10-12108-10113	* TP 3			
R 4	ERDS2TJ 100 T	MAT	10-12108-10013	* TP 4			
				TB 1	62409-1	AMP	10-30801-02400
• FOR 32 TYPE ONLY							
VR1	RM-16TB-206CR	HDK		< OTHERS >			
< CAPACITORS >				SK 1	GD-626	NHD	10-59003-01006
				SK 2	GD-626	NHD	10-59003-01006
C 1	HS23SJ YE 103P	KCK	10-24212-10391	SK 3	GD-626	NHD	10-59003-01006
< CONNECTORS >							
CN207	1951P	MLX	10-30561-00100				
	1380-TL	MLX	10-30562-00100				
CN701	DF1B-2P-2.5DSA	HIR	10-30079-10200				
CN702	DF1B-2P-2.5DSA	HIR	10-30079-10200				
CN703	DF1B-2P-2.5DSA	HIR	10-30079-10200				
CN704	DF1B-3P-2.5DSA	HIR	10-30079-10300				
CN705	SZ-0010-29	SMK	10-51851-00100				
CN706	XB-0865	SMK	10-54307-00100				

4.5 VR BOARD

• VR BOARD Parts List

VR BOARD 94058-15030 PP-904958 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< RESISTORS >							
VR 1	ST-902361	ALP	10-15995-23610				
VR 2	ST-902361	ALP	10-15995-23610				
VR 3	ST-902361	ALP	10-15995-23610				
VR 4	ST-902361	ALP	10-15995-23610				

4.6 VIDEO BOARD
• VIDEO BOARD Parts List

VIDEO BOARD 99052-15610 PP-905261 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< INTEGRATED CIRCUITS >			
IC 1	TC4052BP	TOS	10-01572-20940
IC 2	TC4053BP	TOS	10-01572-20950
IC101	TC4053BP	TOS	10-01572-20950
IC102	TC4053BP	TOS	10-01572-20950
IC103	TC4053BP	TOS	10-01572-20950
IC104	TC4053BP	TOS	10-01572-20950
IC401	AN5560	MAT	10-01004-05560
IC501	TC4053BP	TOS	10-01572-20950
IC502	TC4053BP	TOS	10-01572-20950
IC503	TDA4555	PHI	10-01573-64550
IC601	TDA3505	PHI	10-01573-63500
IC602	TC4053BP	TOS	10-01572-20950
IC603	TC4053BP	TOS	10-01572-20950
IC701	TC4053BP	TOS	10-01572-20950
IC702	TC4538BP	TOS	10-01572-26000
IC703	TC4538BP	TOS	10-01572-26000
IC704	SPD4011BC	NEC	10-01784-20400
IC705	TC4538BP	TOS	10-01572-26000
IC706	TC4081BP	TOS	10-01572-21010
IC707	TC4053BP	TOS	10-01572-20950
IC708	TC4538BP	TOS	10-01572-26000
IC709	TC4538BP	TOS	10-01572-26000
IC710	TC4013BP	TOS	10-01572-20620
IC711	TC4520BP	TOS	10-01572-21800
IC712	TC4013BP	TOS	10-01572-20620
IC801	SPD75P008CU	NEC	10-01784-07500
IC802	TD62504P	TOS	10-01573-01100
IC803	TD62504P	TOS	10-01573-01100
IC804	TL7705CPB	TEX	10-01574-01700
IC901	HA11235	HIT	10-01211-00700
IC902	NJM78M05A	JRC	10-01392-00400
< TRANSISTORS >			
TR 1	2SC1815-Y TPE2	TOS	10-02824-05702
TR 2	2SC1815-Y TPE2	TOS	10-02824-05702
TR 3	2SC1815-Y TPE2	TOS	10-02824-05702
TR 4	2SC1815-Y TPE2	TOS	10-02824-05702
TR 5	2SC1815-Y TPE2	TOS	10-02824-05702
TR 6	2SC1815-Y TPE2	TOS	10-02824-05702
TR 7	2SC1815-Y TPE2	TOS	10-02824-05702
TR 8	2SC1815-Y TPE2	TOS	10-02824-05702
TR 9	2SC1815-Y TPE2	TOS	10-02824-05702
TR 10	2SC1815-Y TPE2	TOS	10-02824-05702
TR101	2SC1815-Y TPE2	TOS	10-02824-05702
TR102	2SC1815-Y TPE2	TOS	10-02824-05702
TR103	2SC1815-Y TPE2	TOS	10-02824-05702
TR104	2SC2901	NEC	10-02824-08500
TR105	2SC1815-Y TPE2	TOS	10-02824-05702
TR106	2SC1815-Y TPE2	TOS	10-02824-05702
TR107	2SC1815-Y TPE2	TOS	10-02824-05702
TR108	2SC2901	NEC	10-02824-08500
TR109	2SC1815-Y TPE2	TOS	10-02824-05702
TR110	2SC1815-Y TPE2	TOS	10-02824-05702
TR111	2SC1815-Y TPE2	TOS	10-02824-05702
TR112	2SC2901	NEC	10-02824-08500
TR201	2SC1815-Y TPE2	TOS	10-02824-05702
TR202	2SC1815-Y TPE2	TOS	10-02824-05702
TR203	2SC1815-Y TPE2	TOS	10-02824-05702
TR204	2SC1815-Y TPE2	TOS	10-02824-05702
TR205	2SC1815-Y TPE2	TOS	10-02824-05702
TR301	2SC1815-Y TPE2	TOS	10-02824-05702
TR302	2SC1815-Y TPE2	TOS	10-02824-05702
TR303	2SC1815-Y TPE2	TOS	10-02824-05702
TR304	2SC1815-Y TPE2	TOS	10-02824-05702
TR306	2SC1815-Y TPE2	TOS	10-02824-05702
TR307	2SC1815-Y TPE2	TOS	10-02824-05702
TR401	2SC1815-Y TPE2	TOS	10-02824-05702
TR402	2SC1815-Y TPE2	TOS	10-02824-05702
TR404	2SA1015-Y TPE2	TOS	10-02822-05402
TR405	2SA1015-Y TPE2	TOS	10-02822-05402
TR406	2SC1815-Y TPE2	TOS	10-02824-05702
TR407	2SA1015-Y TPE2	TOS	10-02822-05402
TR408	2SK614	MAT	10-02828-03115
TR409	2SK614	MAT	10-02828-03115
TR501	2SC1815-Y TPE2	TOS	10-02824-05702
TR502	2SA1015-Y TPE2	TOS	10-02822-05402
TR503	2SC1815-Y TPE2	TOS	10-02824-05702
TR504	2SA1015-Y TPE2	TOS	10-02822-05402
TR505	2SK192A-Y	TOS	10-02828-01180
TR506	2SA1015-Y TPE2	TOS	10-02822-05402
TR507	2SC1815-Y TPE2	TOS	10-02824-05702
TR508	2SC1815-Y TPE2	TOS	10-02824-05702
TR509	2SC1815-Y TPE2	TOS	10-02824-05702
TR510	2SC1815-Y TPE2	TOS	10-02824-05702
TR511	2SC1815-Y TPE2	TOS	10-02824-05702
TR512	2SC1815-Y TPE2	TOS	10-02824-05702
TR601	2SA1015-Y TPE2	TOS	10-02822-05402
TR602	2SA1015-Y TPE2	TOS	10-02822-05402
TR603	2SC1815-Y TPE2	TOS	10-02824-05702
TR604	2SA1015-Y TPE2	TOS	10-02822-05402
TR605	2SA1015-Y TPE2	TOS	10-02822-05402
TR606	2SC1815-Y TPE2	TOS	10-02824-05702
TR607	2SA1015-Y TPE2	TOS	10-02822-05402
TR608	2SC3790F/E	SYO	10-02824-15100
	OTH-126A-B	OSS	10-55518-05260
TR609	2SC3790F/E	SYO	10-02824-15100
TR610	2SA1480E	SYO	10-02822-11160
TR611	2SA1015-Y TPE2	TOS	10-02822-05402
TR612	2SC3790F/E	SYO	10-02824-15100
	OTH-126A-B	OSS	10-55518-05260
TR613	2SC3790F/E	SYO	10-02824-15100
TR614	2SA1480E	SYO	10-02822-11160
TR615	2SA1015-Y TPE2	TOS	10-02822-05402
TR616	2SC3790F/E	SYO	10-02824-15100
	OTH-126A-B	OSS	10-55518-05260
TR617	2SC3790F/E	SYO	10-02824-15100
TR618	2SA1480E	SYO	10-02822-11160
TR701	2SC1815-Y TPE2	TOS	10-02824-05702
TR702	2SA1015-Y TPE2	TOS	10-02822-05402
TR703	2SA1015-Y TPE2	TOS	10-02822-05402
TR704	2SC1815-Y TPE2	TOS	10-02824-05702
TR705	2SC1815-Y TPE2	TOS	10-02824-05702
TR706	2SC1815-Y TPE2	TOS	10-02824-05702
TR707	2SC1815-Y TPE2	TOS	10-02824-05702
TR708	2SC1815-Y TPE2	TOS	10-02824-05702
TR709	2SC1815-Y TPE2	TOS	10-02824-05702
TR710	2SC1815-Y TPE2	TOS	10-02824-05702
TR711	2SC1815-Y TPE2	TOS	10-02824-05702
TR712	2SA1015-Y TPE2	TOS	10-02822-05402
TR713	2SC1815-Y TPE2	TOS	10-02824-05702
TR714	2SC1815-Y TPE2	TOS	10-02824-05702
TR801	2SC1815-Y TPE2	TOS	10-02824-05702
TR901	2SA1015-Y TPE2	TOS	10-02822-05402
TR902	2SC1815-Y TPE2	TOS	10-02824-05702
TR903	2SK614	MAT	10-02828-03115
< DIODES >			
D 1	1S1588 TPB2	TOS	10-03812-01201
D 2	1S1588 TPB2	TOS	10-03812-01201
D 3	1S1588 TPB2	TOS	10-03812-01201
D 4	1S1588 TPB2	TOS	10-03812-01201
D 5	1S1588 TPB2	TOS	10-03812-01201
D 6	1S1588 TPB2	TOS	10-03812-01201
D 7	1S1588 TPB2	TOS	10-03812-01201
D101	1S1588 TPB2	TOS	10-03812-01201
D102	1S1588 TPB2	TOS	10-03812-01201
D103	1S1588 TPB2	TOS	10-03812-01201
D104	1S1588 TPB2	TOS	10-03812-01201
D105	1S1588 TPB2	TOS	10-03812-01201
D106	1S1588 TPB2	TOS	10-03812-01201
D107	1S1588 TPB2	TOS	10-03812-01201
D108	1S1588 TPB2	TOS	10-03812-01201
D109	1S1588 TPB2	TOS	10-03812-01201
D110	1S1588 TPB2	TOS	10-03812-01201
D111	1S1588 TPB2	TOS	10-03812-01201
D112	1S1588 TPB2	TOS	10-03812-01201
D113	1S1588 TPB2	TOS	10-03812-01201
D201	1S1588 TPB2	TOS	10-03812-01201
D202	1S1588 TPB2	TOS	10-03812-01201
D301	1S1588 TPB2	TOS	10-03812-01201
D302	1S1588 TPB2	TOS	10-03812-01201
D601	1S1588 TPB2	TOS	10-03812-01201
D602	1S1588 TPB2	TOS	10-03812-01201
D603	1S1588 TPB2	TOS	10-03812-01201

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NO.	DESCRIPTION	MFD.	PARTS-CODE
D604	1S1588 TPB2	TOS	10-03812-01201
D605	1S1588 TPB2	TOS	10-03812-01201
D606	1S1588 TPB2	TOS	10-03812-01201
D607	1S1588 TPB2	TOS	10-03812-01201
D608	1S1588 TPB2	TOS	10-03812-01201
D609	1S1588 TPB2	TOS	10-03812-01201
D610	1S1588 TPB2	TOS	10-03812-01201
D611	1S1588 TPB2	TOS	10-03812-01201
D612	1S1588 TPB2	TOS	10-03812-01201
D613	1S1588 TPB2	TOS	10-03812-01201
D701	1S1588 TPB2	TOS	10-03812-01201
D702	1S1588 TPB2	TOS	10-03812-01201
D703	1S1588 TPB2	TOS	10-03812-01201
D705	1S1588 TPB2	TOS	10-03812-01201
D708	1S1588 TPB2	TOS	10-03812-01201
D709	1S1588 TPB2	TOS	10-03812-01201
D710	1S1588 TPB2	TOS	10-03812-01201
D713	1S1588 TPB2	TOS	10-03812-01201
D714	1S1588 TPB2	TOS	10-03812-01201
D715	1S1588 TPB2	TOS	10-03812-01201
D716	1S1588 TPB2	TOS	10-03812-01201
D717	1S1588 TPB2	TOS	10-03812-01201
D718	1S1588 TPB2	TOS	10-03812-01201
D719	1S1588 TPB2	TOS	10-03812-01201
D720	1S1588 TPB2	TOS	10-03812-01201
D721	1S1588 TPB2	TOS	10-03812-01201
D722	1S1588 TPB2	TOS	10-03812-01201
D801	1S1588 TPB2	TOS	10-03812-01201
D802	1S1588 TPB2	TOS	10-03812-01201
D803	1S1588 TPB2	TOS	10-03812-01201
D804	1S1588 TPB2	TOS	10-03812-01201
D805	1S1588 TPB2	TOS	10-03812-01201
D806	1S1588 TPB2	TOS	10-03812-01201
D807	1S1588 TPB2	TOS	10-03812-01201
D808	1S1588 TPB2	TOS	10-03812-01201
D809	1S1588 TPB2	TOS	10-03812-01201
D810	1S1588 TPB2	TOS	10-03812-01201
D811	1S1588 TPB2	TOS	10-03812-01201
D812	1S1588 TPB2	TOS	10-03812-01201
D813	1S1588 TPB2	TOS	10-03812-01201
D814	1S1588 TPB2	TOS	10-03812-01201
D815	1S1588 TPB2	TOS	10-03812-01201
D816	MA700A	MAT	10-03363-00700
D817	1S1588 TPB2	TOS	10-03812-01201
D818	1S1588 TPB2	TOS	10-03812-01201
D819	1S1588 TPB2	TOS	10-03812-01201
D820	1S1588 TPB2	TOS	10-03812-01201
D821	1S1588 TPB2	TOS	10-03812-01201
D901	RD6.2EB	NEC	10-03513-01600
D902	RD7.5EB1	NEC	10-03513-01905
D903	RD12EB1	NEC	10-03513-02505
D904	1S1588 TPB2	TOS	10-03812-01201
D905	1S1588 TPB2	TOS	10-03812-01201
D906	V06C	HIT	10-03631-00200
D908	1S1588 TPB2	TOS	10-03812-01201

< RESISTORS >

NO.	DESCRIPTION	MFD.	PARTS-CODE
R 1	ERDS2TJ 473 T	MAT	10-12108-47313
R 2	ERDS2TJ 101 T	MAT	10-12108-10113
R 3	ERDS2TJ 473 T	MAT	10-12108-47313
R 4	ERDS2TJ 222 T	MAT	10-12108-22213
R 5	ERDS2TJ 473 T	MAT	10-12108-47313
R 6	ERDS2TJ 101 T	MAT	10-12108-10113
R 7	ERDS2TJ 473 T	MAT	10-12108-47313
R 8	ERDS2TJ 222 T	MAT	10-12108-22213
R 9	ERDS2TJ 473 T	MAT	10-12108-47313
R 10	ERDS2TJ 101 T	MAT	10-12108-10113
R 11	ERDS2TJ 473 T	MAT	10-12108-47313
R 12	ERDS2TJ 222 T	MAT	10-12108-22213
R 13	ERDS2TJ 750 T	MAT	10-12108-75013
R 14	ERDS2TJ 750 T	MAT	10-12108-75013
R 15	ERDS2TJ 473 T	MAT	10-12108-47313
R 16	ERDS2TJ 101 T	MAT	10-12108-10113
R 17	ERDS2TJ 473 T	MAT	10-12108-47313
R 18	ERDS2TJ 222 T	MAT	10-12108-22213
R 19	ERDS2TJ 101 T	MAT	10-12108-10113
R 21	ERDS2TJ 473 T	MAT	10-12108-47313
R 22	ERDS2TJ 473 T	MAT	10-12108-47313
R 23	ERDS2TJ 473 T	MAT	10-12108-47313
R 24	ERDS2TJ 101 T	MAT	10-12108-10113
R 25	ERDS2TJ 473 T	MAT	10-12108-47313
R 26	ERDS2TJ 222 T	MAT	10-12108-22213
R 27	ERDS1VJ 100 T	MAT	10-12106-10033
R 28	ERDS2TJ 473 T	MAT	10-12108-47313
R 29	ERDS2TJ 101 T	MAT	10-12108-10113
R 30	ERDS2TJ 473 T	MAT	10-12108-47313
R 31	ERDS2TJ 222 T	MAT	10-12108-22213
R 32	ERDS2TJ 473 T	MAT	10-12108-47313
R 33	ERDS2TJ 101 T	MAT	10-12108-10113
R 34	ERDS2TJ 473 T	MAT	10-12108-47313
R 35	ERDS2TJ 222 T	MAT	10-12108-22213
R 36	ERDS2TJ 103 T	MAT	10-12108-10313
R 37	ERDS2TJ 103 T	MAT	10-12108-10313
R 38	ERDS2TJ 103 T	MAT	10-12108-10313
R 39	ERDS2TJ 333 T	MAT	10-12108-33313
R 40	ERDS2TJ 473 T	MAT	10-12108-47313
R 41	ERDS2TJ 473 T	MAT	10-12108-47313
R 42	ERDS2TJ 333 T	MAT	10-12108-33313
R 43	ERDS2TJ 473 T	MAT	10-12108-47313
R 44	ERDS2TJ 473 T	MAT	10-12108-47313
R 45	ERDS2TJ 222 T	MAT	10-12108-22213
R 46	ERDS2TJ 473 T	MAT	10-12108-47313
R 47	ERDS2TJ 473 T	MAT	10-12108-47313
R101	ERDS2TJ 101 T	MAT	10-12108-10113
R102	ERDS2TJ 473 T	MAT	10-12108-47313
R103	ERDS2TJ 473 T	MAT	10-12108-47313
R104	ERDS2TJ 473 T	MAT	10-12108-47313
R105	ERDS2TJ 152 T	MAT	10-12108-15213
R106	ERDS2TJ 222 T	MAT	10-12108-22213
R107	ERDS2TJ 152 T	MAT	10-12108-15213
R108	ERDS2TJ 222 T	MAT	10-12108-22213
R109	ERDS2TJ 152 T	MAT	10-12108-15213
R110	ERDS2TJ 101 T	MAT	10-12108-10113
R111	ERDS2TJ 473 T	MAT	10-12108-47313
R112	ERDS2TJ 473 T	MAT	10-12108-47313
R113	ERDS2TJ 222 T	MAT	10-12108-22213
R114	ERDS2TJ 473 T	MAT	10-12108-47313
R115	ERDS2TJ 683 T	MAT	10-12108-68313
R116	ERDS2TJ 101 T	MAT	10-12108-10113
R117	ERDS2TJ 472 T	MAT	10-12108-47213
R118	ERDS2TJ 222 T	MAT	10-12108-22213
R119	ERDS2TJ 103 T	MAT	10-12108-10313
R120	ERDS1VJ 100 T	MAT	10-12106-10033
R121	ERDS2TJ 101 T	MAT	10-12108-10113
R122	ERDS2TJ 473 T	MAT	10-12108-47313
R123	ERDS2TJ 473 T	MAT	10-12108-47313
R124	ERDS2TJ 152 T	MAT	10-12108-15213
R125	ERDS2TJ 222 T	MAT	10-12108-22213
R126	ERDS2TJ 332 T	MAT	10-12108-33213
R127	ERDS2TJ 222 T	MAT	10-12108-22213
R128	ERDS2TJ 152 T	MAT	10-12108-15213
R129	ERDS2TJ 101 T	MAT	10-12108-10113
R130	ERDS2TJ 473 T	MAT	10-12108-47313
R131	ERDS2TJ 473 T	MAT	10-12108-47313
R132	ERDS2TJ 222 T	MAT	10-12108-22213
R133	ERDS2TJ 683 T	MAT	10-12108-68313
R134	ERDS2TJ 101 T	MAT	10-12108-10113
R135	ERDS2TJ 472 T	MAT	10-12108-47213
R136	ERDS2TJ 222 T	MAT	10-12108-22213
R137	ERDS2TJ 103 T	MAT	10-12108-10313
R138	ERDS2TJ 101 T	MAT	10-12108-10113
R139	ERDS2TJ 473 T	MAT	10-12108-47313
R140	ERDS2TJ 473 T	MAT	10-12108-47313
R141	ERDS2TJ 152 T	MAT	10-12108-15213
R142	ERDS2TJ 222 T	MAT	10-12108-22213
R143	ERDS2TJ 102 T	MAT	10-12108-10213
R144	ERDS2TJ 152 T	MAT	10-12108-15213
R145	ERDS2TJ 222 T	MAT	10-12108-22213
R146	ERDS2TJ 101 T	MAT	10-12108-10113
R147	ERDS2TJ 473 T	MAT	10-12108-47313
R148	ERDS2TJ 473 T	MAT	10-12108-47313
R149	ERDS2TJ 222 T	MAT	10-12108-22213
R150	ERDS2TJ 683 T	MAT	10-12108-68313
R151	ERDS2TJ 101 T	MAT	10-12108-10113
R152	ERDS2TJ 472 T	MAT	10-12108-47213
R153	ERDS2TJ 222 T	MAT	10-12108-22213
R154	ERDS2TJ 472 T	MAT	10-12108-47213
R155	ERDS2TJ 102 T	MAT	10-12108-10213
R201	ERDS2TJ 101 T	MAT	10-12108-10113

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NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
R202	ERDS2TJ 331 T	MAT	10-12108-33113	R523	ERDS2TJ 471 T	MAT	10-12108-47113
R203	ERDS2TJ 101 T	MAT	10-12108-10113	R524	ERDS1VJ 100 T	MAT	10-12106-10033
R204	ERDS2TJ 222 T	MAT	10-12108-22213	R525	ERDS2TJ 472 T	MAT	10-12108-47213
R205	ERDS2TJ 331 T	MAT	10-12108-33113	R526	ERDS2TJ 472 T	MAT	10-12108-47213
R206	ERDS2TJ 152 T	MAT	10-12108-15213	R527	ERDS2TJ 472 T	MAT	10-12108-47213
R207	ERDS2TJ 473 T	MAT	10-12108-47313	R528	ERDS2TJ 472 T	MAT	10-12108-47213
R208	ERDS2TJ 103 T	MAT	10-12108-10313	R529	ERDS1VJ 100 T	MAT	10-12106-10033
R209	ERDS2TJ 103 T	MAT	10-12108-10313	R530	ERDS2TJ 203 T	MAT	10-12108-20313
R210	ERDS2TJ 221 T	MAT	10-12108-22113	R531	ERDS2TJ 472 T	MAT	10-12108-47213
R211	ERDS2TJ 470 T	MAT	10-12108-47013	R532	ERDS2TJ 562 T	MAT	10-12108-56213
R212	ERDS2TJ 152 T	MAT	10-12108-15213	R533	ERDS2TJ 103 T	MAT	10-12108-10313
R213	ERDS2TJ 472 T	MAT	10-12108-47213	R534	ERDS2TJ 103 T	MAT	10-12108-10313
R214	ERDS2TJ 471 T	MAT	10-12108-47113	R535	ERDS2TJ 332 T	MAT	10-12108-33213
R215	ERDS2TJ 471 T	MAT	10-12108-47113	R536	ERDS2TJ 103 T	MAT	10-12108-10313
R216	ERDS2TJ 152 T	MAT	10-12108-15213	R537	ERDS2TJ 103 T	MAT	10-12108-10313
R217	ERDS2TJ 153 T	AT	10-12108-15313	R538	ERDS2TJ 473 T	MAT	10-12108-47313
R218	ERDS2TJ 472 T	MAT	10-12108-47213	R539	ERDS2TJ 821 T	MAT	10-12108-82113
R220	ERDS2TJ 102 T	MAT	10-12108-10213	R540	ERDS2TJ 101 T	MAT	10-12108-10113
R301	ERDS2TJ 101 T	MAT	10-12108-10113	R541	ERDS2TJ 102 T	MAT	10-12108-10213
R302	ERDS2TJ 473 T	MAT	10-12108-47313	R542	ERDS2TJ 104 T	MAT	10-12108-10413
R303	ERDS2TJ 103 T	MAT	10-12108-10313	R601	ERDS1VJ 100 T	MAT	10-12106-10033
R304	ERDS2TJ 103 T	MAT	10-12108-10313	R602	ERDS2TJ 473 T	MAT	10-12108-47313
R305	ERDS2TJ 152 T	MAT	10-12108-15213	R603	ERDS2TJ 103 T	MAT	10-12108-10313
R306	ERDS2TJ 221 T	MAT	10-12108-22113	R604	ERDS2TJ 182 T	MAT	10-12108-18213
R307	ERDS2TJ 470 T	MAT	10-12108-47013	R605	ERDS2TJ 203 T	MAT	10-12108-20313
R308	ERDS2TJ 152 T	MAT	10-12108-15213	R606	ERDS2TJ 472 T	MAT	10-12108-47213
R309	ERDS2TJ 222 T	MAT	10-12108-22213	R607	ERDS2TJ 203 T	MAT	10-12108-20313
R310	ERDS2TJ 223 T	MAT	10-12108-22313	R608	ERDS2TJ 472 T	MAT	10-12108-47213
R311	ERDS2TJ 223 T	MAT	10-12108-22313	R609	ERDS2TJ 473 T	MAT	10-12108-47313
R313	ERDS2TJ 471 T	MAT	10-12108-47113	R610	ERDS2TJ 224 T	MAT	10-12108-22413
R320	ERDS2TJ 101 T	MAT	10-12108-10113	R611	ERDS2TJ 103 T	MAT	10-12108-10313
R321	ERDS2TJ 473 T	MAT	10-12108-47313	R612	ERDS2TJ 562 T	MAT	10-12108-56213
R322	ERDS2TJ 473 T	MAT	10-12108-47313	R613	ERDS2TJ 562 T	MAT	10-12108-56213
R323	ERDS2TJ 472 T	MAT	10-12108-47213	R614	ERDS2TJ 333 T	MAT	10-12108-33313
R324	ERDS2TJ 561 T	MAT	10-12108-56113	R615	ERDS2TJ 222 T	MAT	10-12108-22213
R325	ERDS2TJ 682 T	MAT	10-12108-68213	R616	ERDS2TJ 222 T	MAT	10-12108-22213
R326	ERDS2TJ 332 T	MAT	10-12108-33213	R617	ERDS2TJ 153 T	MAT	10-12108-15313
R327	ERDS2TJ 561 T	MAT	10-12108-56113	R618	ERDS2TJ 153 T	MAT	10-12108-15313
R328	ERDS2TJ 153 T	MAT	10-12108-15313	R619	ERDS2TJ 153 T	MAT	10-12108-15313
R329	ERDS2TJ 472 T	MAT	10-12108-47213	R620	ERDS2TJ 473 T	MAT	10-12108-47313
R331	ERDS2TJ 102 T	MAT	10-12108-10213	R621	ERDS2TJ 473 T	MAT	10-12108-47313
R332	ERDS2TJ 391 T	MAT	10-12108-39113	R622	ERDS2TJ 101 T	MAT	10-12108-10113
R333	RN26C 2B 1200ΩFT	KOA	10-10355-12211	R623	ERDS2TJ 101 T	MAT	10-12108-10113
R334	RN26C 2B 180ΩFT	KOA	10-10355-18111	R624	ERDS2TJ 472 T	MAT	10-12108-47213
R336	RN26C 2B 43KΩFT	KOA	10-10355-43311	R625	ERDS2TJ 472 T	MAT	10-12108-47213
R401	ERDS2TJ 103 T	MAT	10-12108-10313	R626	ERDS2TJ 472 T	MAT	10-12108-47213
R402	ERDS2TJ 103 T	MAT	10-12108-10313	R627	ERDS2TJ 473 T	MAT	10-12108-47313
R403	ERDS2TJ 103 T	MAT	10-12108-10313	R628	ERDS2TJ 472 T	MAT	10-12108-47213
R404	ERDS2TJ 103 T	MAT	10-12108-10313	R629	ERDS2TJ 153 T	MAT	10-12108-15313
R408	ERDS2TJ 103 T	MAT	10-12108-10313	R630	ERDS2TJ 473 T	MAT	10-12108-47313
R409	ERDS2TJ 222 T	MAT	10-12108-22213	R631	ERDS2TJ 472 T	MAT	10-12108-47213
R410	ERDS2TJ 472 T	MAT	10-12108-47213	R632	ERDS2TJ 153 T	MAT	10-12108-15313
R411	ERDS2TJ 222 T	MAT	10-12108-22213	R633	ERDS2TJ 473 T	MAT	10-12108-47313
R412	ERDS2TJ 473 T	MAT	10-12108-47313	R634	ERDS2TJ 472 T	MAT	10-12108-47213
R413	ERDS2TJ 473 T	MAT	10-12108-47313	R635	ERDS2TJ 153 T	MAT	10-12108-15313
R414	ERDS2TJ 103 T	MAT	10-12108-10313	R636	ERDS2TJ 472 T	MAT	10-12108-47213
R415	ERDS2TJ 473 T	MAT	10-12108-47313	R637	ERDS2TJ 103 T	MAT	10-12108-10313
R416	ERDS2TJ 103 T	MAT	10-12108-10313	R638	ERDS2TJ 472 T	MAT	10-12108-47213
R501	ERDS2TJ 101 T	MAT	10-12108-10113	R639	ERDS2TJ 561 T	MAT	10-12108-56113
R502	ERDS2TJ 222 T	MAT	10-12108-22213	R640	ERDS2TJ 561 T	MAT	10-12108-56113
R503	ERDS2TJ 152 T	MAT	10-12108-15213	R641	ERDS2TJ 681 T	MAT	10-12108-68113
R504	ERDS2TJ 152 T	MAT	10-12108-15213	R642	ERDS2TJ 152 T	MAT	10-12108-15213
R505	ERDS2TJ 473 T	MAT	10-12108-47313	R643	ERDS2TJ 101 T	MAT	10-12108-10113
R506	ERDS2TJ 473 T	MAT	10-12108-47313	R644	ERDS2TJ 473 T	MAT	10-12108-47313
R507	ERDS2TJ 681 T	MAT	10-12108-68113	R645	ERDS1VJ 100 T	MAT	10-12106-10033
R508	ERDS2TJ 681 T	MAT	10-12108-68113	R646	ERDS2TJ 471 T	MAT	10-12108-47113
R509	ERDS2TJ 101 T	MAT	10-12108-10113	R647	ERDS2TJ 471 T	MAT	10-12108-47113
R510	ERDS2TJ 472 T	MAT	10-12108-47213	R648	ERDS2TJ 152 T	MAT	10-12108-15213
R511	ERDS2TJ 223 T	MAT	10-12108-22313	R649	ERDS2TJ 102 T	MAT	10-12108-10213
R512	ERDS2TJ 683 T	MAT	10-12108-68313	R650	ERG-2SJ 682	MAT	10-11019-68243
• R513				R651	ERDS2TJ 102 T	MAT	10-12108-10213
R514	ERDS2TJ 331 T	MAT	10-12108-33113	R652	ERG-2SJ 273	MAT	10-11019-27343
R515	ERDS2TJ 560 T	MAT	10-12108-56013	R653	ERDS2TJ 563 T	MAT	10-12108-56313
R516	ERDS2TJ 223 T	MAT	10-12108-22313	R654	ERDS2TJ 333 T	MAT	10-12108-33313
R517	ERDS2TJ 333 T	MAT	10-12108-33313	R655	ERDS2TJ 471 T	MAT	10-12108-47113
R518	ERDS2TJ 331 T	MAT	10-12108-33113	R656	ERDS2TJ 471 T	MAT	10-12108-47113
R519	ERDS2TJ 331 T	MAT	10-12108-33113	R657	ERDS2TJ 152 T	MAT	10-12108-15213
R520	ERDS2TJ 220 T	MAT	10-12108-22013	R658	ERDS2TJ 102 T	MAT	10-12108-10213
R521	ERDS2TJ 223 T	MAT	10-12108-22313	R659	ERG-2SJ 682	MAT	10-11019-68243
R522	ERDS2TJ 683 T	MAT	10-12108-68313	R660	ERDS2TJ 102 T	MAT	10-12108-10213

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NO.	DESCRIPTION	MFD.	PARTS-CODE
R661	ERG-2SJ 273	MAT	10-11019-27343
R662	ERDS2TJ 563 T	MAT	10-12108-56313
R663	ERDS2TJ 333 T	MAT	10-12108-33313
R664	ERDS2TJ 471 T	MAT	10-12108-47113
R665	ERDS2TJ 471 T	MAT	10-12108-47113
R666	ERDS2TJ 152 T	MAT	10-12108-15213
R667	ERDS2TJ 102 T	MAT	10-12108-10213
R668	ERG-2SJ 682	MAT	10-11019-68243
R669	ERDS2TJ 102 T	MAT	10-12108-10213
R670	ERG-2SJ 273	MAT	10-11019-27343
R671	ERDS2TJ 563 T	MAT	10-12108-56313
R672	ERDS2TJ 333 T	MAT	10-12108-33313
R673	ERDS2TJ 331 T	MAT	10-12108-33113
R674	ERDS2TJ 331 T	MAT	10-12108-33113
R675	ERDS2TJ 331 T	MAT	10-12108-33113
R701	ERDS2TJ 101 T	MAT	10-12108-10113
R702	ERDS2TJ 473 T	MAT	10-12108-47313
R703	ERDS2TJ 103 T	MAT	10-12108-10313
R704	ERDS2TJ 102 T	MAT	10-12108-10213
R705	ERDS2TJ 331 T	MAT	10-12108-33113
R706	ERDS2TJ 152 T	MAT	10-12108-15213
R707	ERDS2TJ 222 T	MAT	10-12108-22213
R708	ERDS2TJ 331 T	MAT	10-12108-33113
R709	ERDS2TJ 331 T	MAT	10-12108-33113
R710	ERDS2TJ 474 T	MAT	10-12108-47413
R711	ERDS2TJ 332 T	MAT	10-12108-33213
R712	ERDS2TJ 102 T	MAT	10-12108-10213
R713	ERDS2TJ 101 T	MAT	10-12108-10113
R714	ERDS2TJ 473 T	MAT	10-12108-47313
R715	ERDS2TJ 103 T	MAT	10-12108-10313
R716	ERDS2TJ 472 T	MAT	10-12108-47213
R717	ERDS2TJ 472 T	MAT	10-12108-47213
R718	RN26C 2E 39K Ω FT	KOA	10-10355-39311
R719	ERDS2TJ 473 T	MAT	10-12108-47313
R720	ERDS2TJ 333 T	MAT	10-12108-33313
R721	ERDS2TJ 154 T	MAT	10-12108-15413
R722	ERDS2TJ 103 T	MAT	10-12108-10313
R723	ERDS2TJ 473 T	MAT	10-12108-47313
R724	ERDS1VJ 100 T	MAT	10-12106-10033
R725	RN26C 2E 24K Ω FT	KOA	10-10355-24311
R726	RN26C 2E 24K Ω FT	KOA	10-10355-24311
R727	ERDS2TJ 102 T	MAT	10-12108-10213
R729	ERDS2TJ 682 T	MAT	10-12108-68213
R730	ERDS2TJ 682 T	MAT	10-12108-68213
R731	ERDS2TJ 472 T	MAT	10-12108-47213
R733	ERDS2TJ 393 T	MAT	10-12108-39313
R734	RN26C 2E 68K Ω FT	KOA	10-10355-68311
R735	RN26C 2E 75K Ω FT	KOA	10-10355-75311
R736	ERDS2TJ 102 T	MAT	10-12108-10213
R737	ERDS2TJ 682 T	MAT	10-12108-68213
R738	ERDS2TJ 682 T	MAT	10-12108-68213
R739	ERDS2TJ 472 T	MAT	10-12108-47213
R740	ERDS2TJ 103 T	MAT	10-12108-10313
R741	ERDS2TJ 472 T	MAT	10-12108-47213
R742	ERDS2TJ 222 T	MAT	10-12108-22213
R743	ERDS2TJ 222 T	MAT	10-12108-22213
R744	ERDS2TJ 222 T	MAT	10-12108-22213
R745	ERDS2TJ 332 T	MAT	10-12108-33213
R746	ERDS2TJ 101 T	MAT	10-12108-10113
R747	ERDS2TJ 104 T	MAT	10-12108-10413
R748	ERDS2TJ 222 T	MAT	10-12108-22213
R749	ERDS2TJ 101 T	MAT	10-12108-10113
R750	ERDS2TJ 104 T	MAT	10-12108-10413
R751	ERDS2TJ 103 T	MAT	10-12108-10313
R752	ERDS2TJ 472 T	MAT	10-12108-47213
R753	RN26C 2E 150K Ω FT	KOA	10-10355-15411
R754	RN26C 2E 33K Ω FT	KOA	10-10355-33311
R755	ERDS2TJ 104 T	MAT	10-12108-10413
R756	ERDS2TJ 103 T	MAT	10-12108-10313
R757	ERDS1VJ 100 T	MAT	10-12106-10033
R758	ERDS2TJ 823 T	MAT	10-12108-82313
R759	ERDS2TJ 473 T	MAT	10-12108-47313
R760	ERDS2TJ 103 T	MAT	10-12108-10313
R801	ERDS2TJ 101 T	MAT	10-12108-10113
R802	ERDS2TJ 103 T	MAT	10-12108-10313
R803	ERDS2TJ 103 T	MAT	10-12108-10313
R804	ERDS2TJ 103 T	MAT	10-12108-10313
R805	ERDS2TJ 103 T	MAT	10-12108-10313
R806	ERDS2TJ 222 T	MAT	10-12108-22213
R807	ERDS2TJ 153 T	MAT	10-12108-15313
R812	ERDS2TJ 102 T	MAT	10-12108-10213
R814	ERDS2TJ 102 T	MAT	10-12108-10213
R815	ERDS2TJ 102 T	MAT	10-12108-10213
R816	ERDS2TJ 102 T	MAT	10-12108-10213
R817	ERDS2TJ 102 T	MAT	10-12108-10213
R818	ERDS2TJ 103 T	MAT	10-12108-10313
R819	ERDS2TJ 103 T	MAT	10-12108-10313
R820	ERDS2TJ 103 T	MAT	10-12108-10313
R821	ERDS2TJ 472 T	MAT	10-12108-47213
R822	ERDS2TJ 101 T	MAT	10-12108-10113
R823	ERDS2TJ 101 T	MAT	10-12108-10113
R824	ERDS2TJ 101 T	MAT	10-12108-10113
R825	ERDS2TJ 101 T	MAT	10-12108-10113
R826	ERDS2TJ 101 T	MAT	10-12108-10113
R827	ERDS2TJ 101 T	MAT	10-12108-10113
R828	ERDS2TJ 101 T	MAT	10-12108-10113
R829	ERDS2TJ 101 T	MAT	10-12108-10113
R830	ERDS2TJ 101 T	MAT	10-12108-10113
R831	ERDS2TJ 101 T	MAT	10-12108-10113
R832	ERDS2TJ 101 T	MAT	10-12108-10113
R901	ERDS1VJ 101 T	MAT	10-12106-10123
R902	ERDS2TJ 222 T	MAT	10-12108-22213
R903	ERDS2TJ 473 T	MAT	10-12108-47313
R904	ERDS2TJ 473 T	MAT	10-12108-47313
R905	ERDS2TJ 153 T	MAT	10-12108-15313
R906	ERDS2TJ 472 T	MAT	10-12108-47213
R907	ERDS2TJ 683 T	MAT	10-12108-68313
R909	ERDS2TJ 822 T	MAT	10-12108-82213
R910	ERDS2TJ 102 T	MAT	10-12108-10213
R911	ERDS2TJ 681 T	MAT	10-12108-68113
R912	ERDS2TJ 333 T	MAT	10-12108-33313
R914	ERDS2TJ 682 T	MAT	10-12108-68213
R915	ERDS2TJ 682 T	MAT	10-12108-68213
R916	ERDS2TJ 473 T	MAT	10-12108-47313
R917	ERDS2TJ 472 T	MAT	10-12108-47213
R918	ERDS1VJ 101 T	MAT	10-12106-10123
R919	ERDS2TJ 472 T	MAT	10-12108-47213
R920	ERDS2TJ 103 T	MAT	10-12108-10313
R921	ERDS2TJ 103 T	MAT	10-12108-10313
R922	ERDS2TJ 103 T	MAT	10-12108-10313
R923	ERDS2TJ 102 T	MAT	10-12108-10213
R924	ERDS2TJ 101 T	MAT	10-12108-10113
R925	ERDS2TJ 102 T	MAT	10-12108-10213
R926	ERDS2TJ 103 T	MAT	10-12108-10313
R927	ERDS2TJ 103 T	MAT	10-12108-10313
R928	ERDS2TJ 220 T	MAT	10-12108-22013
R930	ERDS2TJ 103 T	MAT	10-12108-10313
R932	ERDS2TJ 103 T	MAT	10-12108-10313
R933	ERDS2TJ 681 T	MAT	10-12108-68113
R934	ERDS2TJ 222 T	MAT	10-12108-22213
R936	ERX-2SJ 2R2	MAT	10-11021-02243
VR101	RG063UT2 5K Ω	COS	10-15550-50210
VR102	RG063UT2 100 Ω	COS	10-15550-10110
VR103	RG063UT2 2K Ω	COS	10-15550-20210
VR104	RG063UT2 100 Ω	COS	10-15550-10110
VR105	RG063UT2 2K Ω	COS	10-15550-20210
VR106	RG063UT2 100 Ω	COS	10-15550-10110
VR201	RG063UT2 1K Ω	COS	10-15550-10210
VR202	RG063UT2 1K Ω	COS	10-15550-10210
VR301	RG063UT2 1K Ω	COS	10-15550-10210
VR303	RG063UT2 200 Ω	COS	10-15550-20110
VR401	RG063UT2 1K Ω	COS	10-15550-10210
VR501	RG063UT2 2K Ω	COS	10-15550-20210
VR502	RG063UT2 5K Ω	COS	10-15550-50210
VR503	RG063UT2 5K Ω	COS	10-15550-50210
VR601	RG063UT2 10K Ω	COS	10-15550-10310
* VR703			
* VR705			
VR901	RG063UT2 5K Ω	COS	10-15550-50210
VR902	RG063UT2 5K Ω	COS	10-15550-50210
VR903	RG063UT2 5K Ω	COS	10-15550-50210
VR904	RG063UT2 10K Ω	COS	10-15550-10310
VR905	RG063UT2 100 Ω	COS	10-15550-10110
VR906	RG063UT2 100 Ω	COS	10-15550-10110
VR908	RG063UT2 10K Ω	COS	10-15550-10310
TH901	ERT-D 3FHL 402S	MAT	10-19005-00100

< CAPACITORS >

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NO.	DESCRIPTION	MFD.	PARTS-CODE
C 1	ECEA 1JU100 B	MAT	10-20123-10663
C 2	ECEA 1JU100 B	MAT	10-20123-10663
C 3	ECEA 1JU100 B	MAT	10-20123-10663
C 4	ECEA 1JU100 B	MAT	10-20123-10663
C 5	ECEA 1JU100 B	MAT	10-20123-10663
C 6	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C 7	ECEA 1EU101 B	MAT	10-20123-10725
C 8	ECEA 1JU100 B	MAT	10-20123-10663
C 9	ECEA 1JU100 B	MAT	10-20123-10663
C 10	ECEA 1JU100 B	MAT	10-20123-10663
C101	ECEA 1EU470 B	MAT	10-20123-47625
* C102			
C103	ECEA 1EU470 B	MAT	10-20123-47625
C104	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C105	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C106	ECEA 1EU101 B	MAT	10-20123-10725
C107	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C108	ECEA 1EU101 B	MAT	10-20123-10725
C109	ECEA 1EU470 B	MAT	10-20123-47625
C110	RT-HE40 TKSL 020C	KCK	10-24518-02050
C111	ECEA 1EU470 B	MAT	10-20123-47625
C112	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C113	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C114	ECEA 1EU101 B	MAT	10-20123-10725
C115	ECEA 1EU470 B	MAT	10-20123-47625
* C116			
C117	ECEA 1EU470 B	MAT	10-20123-47625
C118	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C119	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C120	ECEA 1EU101 B	MAT	10-20123-10725
C201	RT-HE60 TKSL 181K	KCK	10-24518-18150
C202	ECEA 1EU470 B	MAT	10-20123-47625
C203	ECEA 1JU100 B	MAT	10-20123-10663
C204	RT-HE60 TKSL 181K	KCK	10-24518-18150
C205	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C206	RT-HE40 TKSL 750K	KCK	10-24518-75050
C207	RT-HE40 TKSL 750K	KCK	10-24518-75050
C208	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C209	RT-HE60 TKSL 181K	KCK	10-24518-18150
C210	RT-HE40 TKSL 750K	KCK	10-24518-75050
C211	NP 2D 121J T	TIT	10-22393-12177
C212	ECEA 1EU470 B	MAT	10-20123-47625
C301	RT-HE40 TKSL 470K	KCK	10-24518-47050
C302	RT-HE40 TKSL 470K	KCK	10-24518-47050
C303	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C304	ECEA 1EU470 B	MAT	10-20123-47625
C307	ECEA 1EU470 B	MAT	10-20123-47625
C309	RT-HE40 TKSL 270K	KCK	10-24518-27050
C310	RT-HE70-TKSL 241K	KCK	10-24518-24150
C311	RT-HE40 TKSL 300K	KCK	10-24518-30050
C312	RT-HE40 TKSL 390K	KCK	10-24518-39050
C313	ECQ-B 1H103JZ4	MAT	10-22136-10350
C315	ECQ-B 1H103JZ4	MAT	10-22136-10350
C317	ECQ-B 1H103JZ4	MAT	10-22136-10350
C401	ECQ-B 1H102JZ4	MAT	10-22136-10250
C402	ECQ-B 1H102JZ4	MAT	10-22136-10250
C403	ECEA 1EU470 B	MAT	10-20123-47625
C404	ECEA 2AU0R47 B	MAT	10-20123-47472
C406	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C407	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C501	ECEA 1EU470 B	MAT	10-20123-47625
* C502			
C503	RT-HE40 TKSL 470K	KCK	10-24518-47050
C504	ECEA 1EU470 B	MAT	10-20123-47625
C505	RT-HE40 TKSL 620K	KCK	10-24518-62050
* C506			
C507	ECQ-B 1H102JZ4	MAT	10-22136-10250
C508	ECEA 1EU470 B	MAT	10-20123-47625
C509	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C510	ECEA 1EU471 B	MAT	10-20123-47725
C511	ECQ-B 1H223JZ4	MAT	10-22136-22350
* C512			
* C513			
C514	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C515	ECEA 1EU471 B	MAT	10-20123-47725
C516	ECEA 2AU010 B	MAT	10-20123-10572
C517	ECQ-B 1H103JZ4	MAT	10-22136-10350
C518	ECQ-V 1H473JL2	MAT	10-22137-47350
C519	ECEA 2AU0R47 B	MAT	10-20123-47472
C520	ECQ-B 1H223JZ4	MAT	10-22136-22350
C521	ECQ-B 1H223JZ4	MAT	10-22136-22350
* C524			
* C525			
C526	RT-HE70-TKSL 241K	KCK	10-24518-24150
C527	RT-HE40 TKSL 100K	KCK	10-24518-10050
C528	RT-HE40 TKSL 100K	KCK	10-24518-10050
C529	RT-HE40 TKSL 120K	KCK	10-24518-12050
C601	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C602	ECEA 1EU221 B	MAT	10-20123-22725
C603	ECQ-B 1H223JZ4	MAT	10-22136-22350
C604	ECQ-B 1H223JZ4	MAT	10-22136-22350
C605	ECQ-B 1H223JZ4	MAT	10-22136-22350
C606	ECQ-B 1H223JZ4	MAT	10-22136-22350
C607	ECQ-B 1H223JZ4	MAT	10-22136-22350
C608	ECQ-B 1H223JZ4	MAT	10-22136-22350
C609	ECEA 2AU0R47 B	MAT	10-20123-47472
C610	ECEA 2AU0R47 B	MAT	10-20123-47472
C611	ECQ-B 1H223JZ4	MAT	10-22136-22350
C612	ECQ-B 1H223JZ4	MAT	10-22136-22350
C613	ECQ-B 1H223JZ4	MAT	10-22136-22350
C614	ECEA 2AU010 B	MAT	10-20123-10572
C615	ECEA 1EU101 B	MAT	10-20123-10725
C616	ECEA 1HU220 B	MAT	10-20123-22650
C617	ECQ-B 1H223JZ4	MAT	10-22136-22350
C618	ECQ-B 1H223JZ4	MAT	10-22136-22350
C619	ECQ-B 1H223JZ4	MAT	10-22136-22350
C620	NP 2D 101J T	TIT	10-22393-10177
C621	ECEA 2AU010 B	MAT	10-20123-10572
C622	ECEA 2AU0R47 B	MAT	10-20123-47472
C623	ECEA 1HN010S B	MAT	10-20129-10550
C624	ECEA 2AU010 B	MAT	10-20123-10572
C626	ECEA 2DU330W	MAT	10-20125-33677
C627	ECQ-E 2104KF	MAT	10-22129-10478
C628	ECEA 1EU101 B	MAT	10-20123-10725
C630	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C631	RT-HE40 TKSL 220K	KCK	10-24518-22050
C632	ECQ-B 1H332JZ4	MAT	10-22136-33250
C633	ECQ-B 1H222JZ4	MAT	10-22136-22250
* C634			
* C635			
C636	NP 2D 101J T	TIT	10-22393-10177
C637	RT-HE40 TKSL 270K	KCK	10-24518-27050
C638	ECQ-B 1H332JZ4	MAT	10-22136-33250
C639	ECQ-B 1H222JZ4	MAT	10-22136-22250
* C640			
* C641			
C642	NP 2D 101J T	TIT	10-22393-10177
C643	RT-HE40 TKSL 270K	KCK	10-24518-27050
C644	ECQ-B 1H332JZ4	MAT	10-22136-33250
* C645			
* C646			
C647	NP 2D 101J T	TIT	10-22393-10177
C648	ECQ-B 1H222JZ4	MAT	10-22136-22250
C649	ECQ-B 1H333JZ4	MAT	10-22136-33350
C650	ECQ-B 1H333JZ4	MAT	10-22136-33350
C651	ECQ-B 1H333JZ4	MAT	10-22136-33350
C701	ECEA 1JU100 B	MAT	10-20123-10663
C702	RT-HE40 TKSL 750K	KCK	10-24518-75050
C703	ECQ-B 1H333JZ4	MAT	10-22136-33350
C704	ECEA 2AU0R47 B	MAT	10-20123-47472
C705	RT-HE40 TKSL 680K	KCK	10-24518-68050
C706	NP 2D 102J T	TIT	10-22393-10277
C707	NP 2D 221J T	TIT	10-22393-22177
C708	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C709	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C710	ECEA 1EU101 B	MAT	10-20123-10725
C711	NP 2D 101J T	TIT	10-22393-10177
C712	NP 2D 221J T	TIT	10-22393-22177
C713	DM05C 101J3	SOS	10-23097-10150
C714	NP 2D 471J T	TIT	10-22393-47177
C715	NP 2D 101J T	TIT	10-22393-10177
C716	RT-HE40 TKSL 750K	KCK	10-24518-75050
C717	ECQ-B 1H682JZ4	MAT	10-22136-68250
C718	NP 2D 471J T	TIT	10-22393-47177
C719	NP 2D 101J T	TIT	10-22393-10177
C720	NP 2D 102J T	TIT	10-22393-10277
C721	ECEA 2AU010 B	MAT	10-20123-10572
C722	ECQ-B 1H103JZ4	MAT	10-22136-10350
C723	ECQ-V 1H473JL2	MAT	10-22137-47350

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NO.	DESCRIPTION	MFD.	PARTS-CODE
C724	ECQ-B 1H103JZ4	MAT	10-22136-10350
C725	ECQ-B 1H472JZ4	MAT	10-22136-47250
C726	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C727	ECEA 1EU101 B	MAT	10-20123-10725
C802	ECQ-B 1H103JZ4	MAT	10-22136-10350
C803	NP 2D 101J T	TIT	10-22393-10177
C804	ECEA 2AU0R47 B	MAT	10-20123-47472
C805	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C806	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C807	EEC S5R5H224	MAT	10-29010-22405
C808	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C809	ECEA 1EU101 B	MAT	10-20123-10725
C901	ECEA 1EU471 B	MAT	10-20123-47725
C902	ECEA 2AU010 B	MAT	10-20123-10572
C903	ECEA 2AU010 B	MAT	10-20123-10572
C904	ECQ-B 1H103JZ4	MAT	10-22136-10350
C905	ECEA 2AU010 B	MAT	10-20123-10572
C906	ECQ-B 1H332JZ4	MAT	10-22136-33250
C907	ECQ-F 6332KZ	MAT	10-22121-33286
C908	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C909	ECEA 1EU470 B	MAT	10-20123-47625
C910	ECQ-B 1H222JZ4	MAT	10-22136-22250
C911	ECQ-B 1H222JZ4	MAT	10-22136-22250
C912	ECEA 1EU471 B	MAT	10-20123-47725
C913	ECQ-V 1H224JZ	MAT	10-22138-22450
C914	ECEA 2AU010 B	MAT	10-20123-10572
C915	ECQ-B 1H332JZ4	MAT	10-22136-33250
C917	ECEA 2AU4R7 B	MAT	10-20123-47572
C918	ECQ-B 1H222JZ4	MAT	10-22136-22250
C919	NP 2D 471J T	TIT	10-22393-47177
C920	RT-HE40 TKSL 470K	KCK	10-24518-47050
C921	DHR 1V 474K1S	NEC	10-21092-47435
C922	DHR 1V 334K1S	NEC	10-21092-33435
C923	NP 2D 101J T	TIT	10-22393-10177
C924	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C926	ECEA 1EU101 B	MAT	10-20123-10725
C927	ECEA 1EU101 B	MAT	10-20123-10725
VC201	ECV 1ZW 20X53T	MAT	10-25010-00300
VC301	ECV 1ZW 20X53T	MAT	10-25010-00300
VC501	ECV 1ZW 40X53T	MAT	10-25010-00600

< INDUCTANCE COILS >

NO.	DESCRIPTION	MFD.	PARTS-CODE
L201	ST-901285A	IKE	10-40985-12851
L202	LF5.0ST26 100K	KOA	10-40332-10000
L203	LF5.0ST26 330K	KOA	10-40332-33000
L301	ST-901285A	IKE	10-40985-12851
L302	LF5.0ST26 390K	KOA	10-40332-39000
L303	LF5.0ST26 4R7K	KOA	10-40332-04700
L304	LF5.0ST26 560K	KOA	10-40332-56000
L305	LF5.0ST26 8R2K	KOA	10-40332-08200
L306	P-8R2	SUD	10-40451-08200
L501	LF5.0ST26 100K	KOA	10-40332-10000
L502	LF5.0ST26 3R3K	KOA	10-40332-03300
L601	LF5.0ST26 3R9K	KOA	10-40332-03900
L602	LF5.0ST26 3R9K	KOA	10-40332-03900
L603	LF5.0ST26 3R9K	KOA	10-40332-03900
L801	LHL08TB 101K	TYU	10-40335-10100

< FILTERS >

NO.	DESCRIPTION	MFD.	PARTS-CODE
FL201	UGL-312BNT	SWC	10-43602-03120

< DELAY LINES >

NO.	DESCRIPTION	MFD.	PARTS-CODE
DL301	EFD-EN645A11	MAT	10-44121-00200
DL501	ELT-10Z214M	MAT	10-44122-00300
DL502	CN-100	SWC	10-44062-00100

< CRYSTALS >

NO.	DESCRIPTION	MFD.	PARTS-CODE
X201	HC-49/U	DSK	10-45006-00110
X301	HC-49/U	DSK	10-45006-00111
X801	CST4.00MGW	MUR	10-45023-00040

< SWITCHES >

NO.	DESCRIPTION	MFD.	PARTS-CODE
S 1	00220658	TKR	10-36002-03600
S501	SS-12SBP2	NKK	10-36002-02300

< CONNECTORS >

NO.	DESCRIPTION	MFD.	PARTS-CODE
CN301	ST-902480	EMD	10-30995-24800
CN306	DF1-5P-2.5DSA	HIR	10-30079-00500
	DF1-SP	HIR	10-30079-00010
CN315	DF1B-8P-2.5DSA	HIR	10-30079-10800
CN316	DF1B-3P-2.5DSA	HIR	10-30079-10300
CN317	DF1B-12DP-2.5DSA	HIR	10-30079-11200
CN318	DF1B-6P-2.5DSA	HIR	10-30079-10600
CN319	DF1B-18DP-2.5DSA	HIR	10-30079-11800
CN320	DF1B-2P-2.5DSA	HIR	10-30079-10200
CN321	DF1B-2P-2.5DSA	HIR	10-30079-10200
CN322	DF1B-2P-2.5DSA	HIR	10-30079-10200
CN323	DF1B-30DP-2.5DSA	HIR	10-30079-13000
EL801	00-9067-033-000-806	ELC	10-30504-00330
	00-9067-020-000-807	ELC	10-30504-00200

< TEST POLES >

* TP101
* TP102
* TP103
* TP104
* TP501
* TP502
* TP503
* TP504
* TP505
* TP601
* TP602
* TP603
* TP604
* TP605
* TP606
* TP607
* TP701
* TP702
* TP703
* TP704
* TP705
* TP706
* TP707
* TP708
* TP901
* TP902
* TP903
* TP904

< OTHERS >

NO.	DESCRIPTION	MFD.	PARTS-CODE
	IC38-4206-S4	YMI	10-54013-38420

• VIDEO BOARD(PAL) Parts List

VIDEO BOARD(PAL) 99053-15720 PP-905372 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< CAPACITORS >							
C810	RT-DSXE85TK YF 104Z	KCK	10-24518-10425				
C811	RT-DSXE85TK YF 104Z	KCK	10-24518-10425				
C812	RT-DSXE85TK YF 104Z	KCK	10-24518-10425				
C813	RT-DSXE85TK YF 104Z	KCK	10-24518-10425				
C814	RT-DSXE85TK YF 104Z	KCK	10-24518-10425				
C815	RT-DSXE85TK YF 104Z	KCK	10-24518-10425				

• VIDEO SUB BOARD Parts List

VIDEO SUB BOARD 99052-15520 PP-905252 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< TRANSISTORS >							
TR 2	2SC1815-Y TPE2	TOS	10-02824-05702				
TR 3	2SC1815-Y TPE2	TOS	10-02824-05702				
TR 4	2SC1815-Y TPE2	TOS	10-02824-05702				
< RESISTORS >							
R 4	ERDS2TJ 103 T	MAT	10-12108-10313				
R 5	ERDS2TJ 103 T	MAT	10-12108-10313				
R 6	ERDS2TJ 103 T	MAT	10-12108-10313				
R 7	ERDS2TJ 103 T	MAT	10-12108-10313				
R 8	ERDS2TJ 103 T	MAT	10-12108-10313				
R 9	ERDS2TJ 103 T	MAT	10-12108-10313				
R 10	ERDS2TJ 103 T	MAT	10-12108-10313				
VR 1	RG063UT2 500K Ω	COS	10-15550-50410				
VR 2	RG063UT2 500K Ω	COS	10-15550-50410				

• VIDEO SUB2 BOARD Parts List

VIDEO SUB2 BOARD 99053-15650 PP-905365 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< RESISTORS >							
R 1	ERDS2TJ 472 T	MAT	10-12108-47213				
VR 1	RG063UT2 5K Ω	COS	10-15550-50210				
< CAPACITORS >							
C 1	DHR 1C 475M1S	NEC	10-21093-47516				
C 2	DHR 1C 475M1S	NEC	10-21093-47516				

4.7 DEF&HV BOARD

• DEF&HV BOARD Parts List

DEF&HV BOARD 99052-15420 PP-905242 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< INTEGRATED CIRCUITS >			
IC101	NJM7812FA	JRC	10-01392-00223
	0SH-3030-SP	RYO	10-55518-00300
IC102	SPC4558C	NEC	10-01783-02100
< TRANSISTORS >			
TR101	2SD1138D	HIT	10-02825-03301
TR102	2SB861C	HIT	10-02823-01000
TR103	2SD1138D	HIT	10-02825-03301
TR104	2SA1015-Y TPE2	TOS	10-02822-05402
TR105	2SD1407-Y	TOS	10-02825-04055
TR106	2SD1407-Y	TOS	10-02825-04055
TR107	2SD1138D	HIT	10-02825-03301
TR108	2SC1815-Y TPE2	TOS	10-02824-05702
TR109	2SD1407-Y	TOS	10-02825-04055
TR201	2SC3588K	NEC	10-02824-14601
TR202	2SC4760	TOS	10-02824-21140
TR205	2SC1815-Y TPE2	TOS	10-02824-05702
TR206	2SC4760	TOS	10-02824-21140
TR207	2SB649A-C	HIT	10-02823-00501
TR208	2SJ76	HIT	10-02827-00100
TR209	2SC1815-Y TPE2	TOS	10-02824-05702
TR210	2SC2298B	HIT	10-02824-06880
TR211	2SC1815-Y TPE2	TOS	10-02824-05702
TR212	2SC2298B	HIT	10-02824-06880
TR213	2SC1815-Y TPE2	TOS	10-02824-05702
TR214	2SC1815-Y TPE2	TOS	10-02824-05702
	SP123K	MIZ	10-55522-01230
	SP123K	MIZ	10-55522-01230
< DIODES >			
D101	MA27W-A	MAT	10-03363-00200
D102	DFH10TG	SYO	10-03093-00200
D103	1S1588 TPB2	TOS	10-03812-01201
D104	1S1588 TPB2	TOS	10-03812-01201
D105	1S1588 TPB2	TOS	10-03812-01201
D106	RD12EB1	NEC	10-03513-02505
D107	1S1588 TPB2	TOS	10-03812-01201
D108	1S1588 TPB2	TOS	10-03812-01201
D109	1S1588 TPB2	TOS	10-03812-01201
D110	1S1588 TPB2	TOS	10-03812-01201
D111	V06C	HIT	10-03631-00200
D112	1S1588 TPB2	TOS	10-03812-01201
D113	1S1588 TPB2	TOS	10-03812-01201
D114	RD24EB1	NEC	10-03513-03205
D115	1S1588 TPB2	TOS	10-03812-01201
D201	DFH10TG	SYO	10-03093-00200
D202	RK49	SKN	10-03514-10490
D203	DFD30TG	SYO	10-03093-00400
D204	5VUZ52	TOS	10-03853-10525
D210	DFH10TG	SYO	10-03093-00200
D211	DFC15TR	SYO	10-03093-00300
D212	DFH10TG	SYO	10-03093-00200
D213	DFH10TG	SYO	10-03093-00200
D214	V06C	HIT	10-03631-00200
D215	DFH10TG	SYO	10-03093-00200
D216	V06C	HIT	10-03631-00200
D217	1S1588 TPB2	TOS	10-03812-01201
D218	V06C	HIT	10-03631-00200
D219	1S1588 TPB2	TOS	10-03812-01201
D220	V06C	HIT	10-03631-00200
D221	5VUZ52	TOS	10-03853-10525
< RESISTORS >			
R101	ERG-2 ANJ 681H	MAT	10-11025-68143
R102	ERDS2TJ 391 T	MAT	10-12108-39113
R103	ERG-1 ANJ 102	MAT	10-11005-10233
R104	ERG-1 ANJ 102	MAT	10-11005-10233
R105	ERDS2TJ 221 T	MAT	10-12108-22113
R106	ERDS2TJ 101 T	MAT	10-12108-10113
R107	ERX-2 ANJ 1R0H	MAT	10-11029-01043
R108	ERDS1VJ 1R0 T	MAT	10-12106-01023
R109	ERDS2TJ 153 T	MAT	10-12108-15313
R110	ERDS2TJ 471 T	MAT	10-12108-47113
R111	ERG-2 ANJ 471H	MAT	10-11025-47143
R112	ERX-2 ANJ 2R2H	MAT	10-11029-02243
R113	ERDS2TJ 103 T	MAT	10-12108-10313
R114	ERDS2TJ 103 T	MAT	10-12108-10313
R115	ERDS2TJ 103 T	MAT	10-12108-10313
R116	ERDS2TJ 333 T	MAT	10-12108-33313
R117	ERDS2TJ 102 T	MAT	10-12108-10213
R118	ERDS2TJ 472 T	MAT	10-12108-47213
R119	ERDS1VJ 472 T	MAT	10-12106-47223
R120	ERDS2TJ 152 T	MAT	10-12108-15213
R121	ERDS1VJ 471 T	MAT	10-12106-47133
R122	ERDS2TJ 103 T	MAT	10-12108-10313
R123	ERDS2TJ 103 T	MAT	10-12108-10313
R124	ERDS2TJ 103 T	MAT	10-12108-10313
R125	ERDS2TJ 222 T	MAT	10-12108-22213
R128	ERDS2TJ 472 T	MAT	10-12108-47213
R129	ERDS2TJ 103 T	MAT	10-12108-10313
R130	ERDS2TJ 473 T	MAT	10-12108-47313
R131	ERDS2TJ 103 T	MAT	10-12108-10313
R132	ERDS2TJ 472 T	MAT	10-12108-47213
R133	ERDS2TJ 333 T	MAT	10-12108-33313
R134	ERDS2TJ 332 T	MAT	10-12108-33213
R135	ERDS2TJ 152 T	MAT	10-12108-15213
R136	ERDS2TJ 103 T	MAT	10-12108-10313
R201	ERDS2TJ 103 T	MAT	10-12108-10313
R202	ERG-2 ANJ 473H	MAT	10-11025-47343
R203	ERG-2 ANJ 471H	MAT	10-11025-47143
R204	ERG-2 ANJ 471H	MAT	10-11025-47143
R205	ERX-2ANJ R47H	MAT	10-11029-96543
R206	ERDS1VJ 104 T	MAT	10-12106-10433
R208	ERDS2TJ 103 T	MAT	10-12108-10313
R211	ERDS2TJ 103 T	MAT	10-12108-10313
R212	ERG-2 ANJ 331H	MAT	10-11025-33143
R213	ERG-2 ANJ 683H	MAT	10-11025-68343
R215	ERC-12GJ 124	MAT	10-13004-12423
R216	ERDS2TJ 330 T	MAT	10-12108-33013
R217	ERDS2TJ 332 T	MAT	10-12108-33213
R218	ERG-2 ANJ 103H	MAT	10-11025-10343
R219	ERDS2TJ 222 T	MAT	10-12108-22213
R220	ERX-2 ANJ 1R0H	MAT	10-11029-01043
R221	ERDS1VJ 100 T	MAT	10-12106-10033
R222	ERDS2TJ 105 T	MAT	10-12108-10513
R224	ERDS2TJ 103 T	MAT	10-12108-10313
R225	ERDS2TJ 103 T	MAT	10-12108-10313
R226	ERDS2TJ 222 T	MAT	10-12108-22213
R227	ERDS2TJ 103 T	MAT	10-12108-10313
R228	ERDS2TJ 103 T	MAT	10-12108-10313
R229	ERDS2TJ 222 T	MAT	10-12108-22213
R230	ERDS2TJ 472 T	MAT	10-12108-47213
R231	ERDS2TJ 472 T	MAT	10-12108-47213
VR101	RG063UT2 50KΩ	COS	10-15550-50310
VR102	RG063UT2 10KΩ	COS	10-15550-10310
VR103	RG063UT2 10KΩ	COS	10-15550-10310
VR104	RG063UT2 100KΩ	COS	10-15550-10410
VR105	RG063UT2 5KΩ	COS	10-15550-50210
VR201	RG063UT2 10KΩ	COS	10-15550-10310
VR202	RG063UT2 100KΩ	COS	10-15550-10410
VR203	WR188K 2.5VS 50Ω	NOB	10-15663-50000
VR204	RG063UT2 500KΩ	COS	10-15550-50410
< CAPACITORS >			
C101	ECEA 1JU100 B	MAT	10-20123-10663
C102	ECEA 1JU100 B	MAT	10-20123-10663
C103	ECEA 1HU220 B	MAT	10-20123-22650
C104	ECEA 1JU221	MAT	10-20125-22763
C105	ECEA 2AU010 B	MAT	10-20123-10572
C106	ECEA 1EN100S B	MAT	10-20129-10625
C107	ECQ-B 1H333JZ4	MAT	10-22136-33350
C108	ECEA 2CU010 B	MAT	10-20123-10575
C109	ECEA 1EN100S B	MAT	10-20129-10625
C110	RT-DSXE85TK YF 104Z	KCK	10-24518-10425
C111	ECEA 1EU470 B	MAT	10-20123-47625
C112	ECEA 1EU101 B	MAT	10-20123-10725
C113	ECQ-E 2473KF	MAT	10-22129-47378
C114	ECEA 1HU470 B	MAT	10-20123-47650
C115	ECEA 1JU100 B	MAT	10-20123-10663
C116	ECEA 1JU100 B	MAT	10-20123-10663
C117	ECQ-B 1H102JZ4	MAT	10-22136-10250
C118	ECEA 1JU100 B	MAT	10-20123-10663

DEF&HV BOARD 99052-15420 PP-905242 2 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
C120	ECEA 1JU102	MAT	10-20125-10863
C201	ECEA 2CU470W	MAT	10-20125-47676
C202	ECQ-F 6222KZ	MAT	10-22121-22286
C203	ECEA 1CU102	MAT	10-20125-10816
C204	ECQ-V 1H473JL2	MAT	10-22137-47350
C205	DKR 102J 1600V D00	SIN	10-22104-10290
C206	DTW 103J 630V	SIN	10-22100-10387
C207	DKR 562J 1600V D00	SIW	10-22104-56290
C209	ECEA 2CU101	MAT	10-20125-10776
C211	DHS 104J/200V	SIN	10-22097-10477
C212	DHS 224J/200V	SIN	10-22097-22477
C213	DHS 564J/200V	SIN	10-22097-56477
C216	HS11SJ YB 102K	KCK	10-24212-10291
C217	ECEA 2AU2R2 B	MAT	10-20123-22572
C218	DKR 332J 1600V D00	SIN	10-22104-33290
C219	DKR 102J 1600V D00	SIN	10-22104-10290
C220	DTW 473J 200V	SIN	10-22100-47377
C221	DTW 472J 630V	SIN	10-22100-47287
C223	ECQ-E 2473KF	MAT	10-22129-47378
C224	ECA2CM221	MAT	
< INDUCTANCE COILS >			
L201	ST-901776	IKE	10-40985-17760
L202	HL11D 223K	HRN	10-40212-00200
L203	ST-902678	IKE	
< TRANSFORMERS >			
T201	ETH-19Y22AY	MAT	10-40130-01000
< RELAYS >			
RL201	AJY2315	MAD	10-46007-01235
RL202	AJY2315	MAD	10-46007-01235
< CONNECTORS >			
CN201	DF1B-18DP-2.5DSA	HIR	10-30079-11800
CN202	00-9090-04-0116-805	ELC	10-30508-10042
CN203	DF1B-3P-2.5DSA	HIR	10-30079-10300
CN204	DF1B-5P-2.5DSA	HIR	10-30079-10500
CN205	DF1B-14P-2.5DSA	HIR	10-30079-11410
CN206	1951R	MLX	10-30561-00200
	1381-TL	MLX	10-30562-00200
CN705	TS-80H-01-A1	TAI	10-30423-00350
	005T-1100	TAI	10-30423-00010
< TEST POLES >			
* TP101			
* TP102			
* TP103			
* TP104			
* TP201			
* TP202			
* TP203			
* TP204			
* TP205			

• DEF&HV BOARD(24") Parts List

DEF&HV BOARD 99052-15440 PP-905244 2 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< RESISTORS >			
R126	ERDS1VJ 331 T	MAT	10-12106-33133
R127	ERDS1VJ 750 T	MAT	10-12106-75023
< CAPACITORS >			
C208	DKR 272J 1600V D00	SIN	10-22104-27290

• DEF&HV BOARD(32") Parts List

DEF&HV BOARD 99052-15430 PP-905243 2 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< RESISTORS >			
R126	ERDS1VJ 471 T	MAT	10-12106-47133
R127	ERDS1VJ 101 T	MAT	10-12106-10123
< CAPACITORS >			
C208	DKR 102J 1600V D00	SIN	10-22104-10290
C222	DKR 152J 1600V D00	SIN	10-22104-15290

4-8 POWER BOARD

• POWER BOARD Parts List

POWER BOARD 99052-15450 PP-905245 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< INTEGRATED CIRCUITS >			
IC 1	μPC1394C	NEC	10-01783-02040
IC 2	TL431CLPB	TEX	10-01574-00711
IC 3	PS2652L	NEC	10-09451-26520
< TRANSISTORS >			
TR 5	2SC2752K	NEC	10-02824-08435
TR 6	2SA1206	NEC	10-02822-08500
TR 7	2SD668AC	HIT	10-02825-02601
TR 8	2SB648A-C	HIT	10-02823-00401
TR 9	2SK684	HIT	10-02828-03180
	TC-80A	SKK	10-59001-01050
TR 10	2SC2298B	HIT	10-02824-06880
TR 11	2SD1138D	HIT	10-02825-03301
< DIODES >			
D 1	10J4B41	TOS	10-03916-00500
D 9	V06C	HIT	10-03631-00200
D 10	V06C	HIT	10-03631-00200
D 11	RD10EB2	NEC	10-03513-02305
D 16	RD15EB	NEC	10-03513-02700
D 17	DFC15TR	SYO	10-03093-00300
D 18	DFH10TG	SYO	10-03093-00200
D 19	1S1588 TPB2	TOS	10-03812-01201
D 20	FMG-G26S	SKN	10-03157-03090
D 21	FMG-G26S	SKN	10-03157-03090
D 23	DFH10TG	SYO	10-03093-00200
D 24	FMG-G36S	SKN	10-03157-03150
D 26	RD6.8EB2	NEC	10-03513-01705
D 27	1S1588 TPB2	TOS	10-03812-01201
D 28	RD12EB3	NEC	10-03513-02506
< RESISTORS >			
R 1	ERF-10ZYK 3R3	MAT	10-14121-03374
R 9	ERG-2SJ 104	MAT	10-11019-10443
R 10	ERG-2SJ 104	MAT	10-11019-10443
R 11	ERG-2SJ 104	MAT	10-11019-10443
R 12	ERG-2SJ 223	MAT	10-11019-22343
R 13	ERDS2TJ 102 T	MAT	10-12108-10213
R 14	ERDS2TJ 103 T	MAT	10-12108-10313
R 15	ERDS2TJ 561 T	MAT	10-12108-56113
R 16	ERDS2TJ 101 T	MAT	10-12108-10113
R 17	ERG-2SJ 104	MAT	10-11019-10443
R 18	ERG-2SJ 104	MAT	10-11019-10443
R 19	ERDS2TJ 103 T	MAT	10-12108-10313
R 20	ERDS1VJ 470 T	MAT	10-12106-47033
R 21	ERX-3SJ R75	MAT	
R 22	ERDS1VJ 271 T	MAT	10-12106-27133
R 23	ERDS2TJ 332 T	MAT	10-12108-33213
R 24	ERDS2TJ 473 T	MAT	10-12108-47313
R 25	ERDS2TJ 473 T	MAT	10-12108-47313
R 26	ERDS2TJ 332 T	MAT	10-12108-33213
R 27	ERDS2TJ 333 T	MAT	10-12108-33313
R 28	ERDS2TJ 103 T	MAT	10-12108-10313
R 29	ERDS2TJ 103 T	MAT	10-12108-10313
R 30	ERDS2TJ 103 T	MAT	10-12108-10313
R 31	ERDS2TJ 622 T	MAT	10-12108-62213
R 32	ERDS2TJ 103 T	MAT	10-12108-10313
R 33	ERDS2TJ 103 T	MAT	10-12108-10313
R 34	ERDS2TJ 104 T	MAT	10-12108-10413
R 35	ERDS2TJ 472 T	MAT	10-12108-47213
R 36	ERDS2TJ 332 T	MAT	10-12108-33213
R 37	ERDS2TJ 474 T	MAT	10-12108-47413
R 38	ERDS2TJ 273 T	MAT	10-12108-27313
R 39	ERDS2TJ 104 T	MAT	10-12108-10413
R 40	ERDS2TJ 101 T	MAT	10-12108-10113
R 41	ERG-2SJ 223	MAT	10-11019-22343
R 42	ERG-2SJ 223	MAT	10-11019-22343
R 43	ERDS2TJ 471 T	MAT	10-12108-47113
R 44	ERDS2TJ 681 T	MAT	10-12108-68113
R 45	ERG-2SJ 104	MAT	10-11019-10443
R 46	ERDS2TJ 471 T	MAT	10-12108-47113
R 47	ERDS2TJ 152 T	MAT	10-12108-15213
R 49	ERDS1VJ 750 T	MAT	10-12106-75023
R 50	ERDS2TJ 472 T	MAT	10-12108-47213
VR 1	RG063UT2 5K Ω	COS	10-15550-50210
VR 2	RG063UT2 1K Ω	COS	10-15550-10210
VS 1	ERZ-08D3K101	MAT	10-19007-00700
< CAPACITORS >			
C 1	XE 224-Z	OKA	10-22692-22478
C 2	XE 224-Z	OKA	10-22692-22478
C 3	ECK-D NS 222MEX	MAT	10-24122-22200
C 4	ECK-D NS 222MEX	MAT	10-24122-22200
C 10	ECOS 2DG681T	MAT	10-20142-68777
C 11	ECOS 2DG681T	MAT	10-20142-68777
C 12	ECEA 1EU470 B	MAT	10-20123-47625
C 13	ECEA 2AU010 B	MAT	10-20123-10572
C 14	DFZ 104J 400V	SIN	10-22102-10483
C 15	DFZ 104J 400V	SIN	10-22102-10483
C 17	ECK-D NS 222MEX	MAT	10-24122-22200
C 18	ECK-D NS 222MEX	MAT	10-24122-22200
C 19	ECEA 1EGE101	MAT	10-20137-10725
C 20	ECEA 1JU100 B	MAT	10-20123-10663
C 21	ECQ-B 1H223JZ4	MAT	10-22136-22350
C 22	NP 2D 471J T	TIT	10-22393-47177
C 23	ECQ-B 1H103JZ4	MAT	10-22136-10350
C 24	ECEA 1EU330 B	MAT	10-20123-33625
C 25	ECEA 1EU101 B	MAT	10-20123-10725
C 26	NP 2D 471J T	TIT	10-22393-47177
C 27	ECEA 2AU010 B	MAT	10-20123-10572
C28	ECA1JHG331	MAT	
C 29	ECEA 1EGE222	MAT	10-20137-22825
C 30	ECEA 1EU470 B	MAT	10-20123-47625
C 31	ECEA 1EU330 B	MAT	10-20123-33625
C32	ECA2CM221	MAT	
C 35	ECOS 2DG681T	MAT	10-20142-68777
C 36	ECEA 2AGE101	MAT	10-20127-10772
C 37	ECEA 2EU3R3	MAT	10-20125-33578
C 38	ECQ-E 2104KS	MAT	10-22128-10477
C 39	ECQ-V 1H104JL2	MAT	10-22137-10450
C 40	ECEA 2EGE100	MAT	10-20137-10678
C 41	ECQ-E 2104KS	MAT	10-22128-10477
< INDUCTANCE COILS >			
L 2	AB 4X2X6	TOS	10-42101-00400
L 6	AB 4X2X6	TOS	10-42101-00400
L 9	TSL1110-101K1R0	TDK	10-40586-00304
L 10	TSL0707-221KR44	TDK	10-40586-00104
L 11	AB 4X2X6	TOS	10-42101-00400
L 12	TSL1110-101K1R0	TDK	10-40586-00304
< TRANSFORMERS >			
T1	ST-902607	IKE	
< FILTERS >			
FL 1	ST-901163	IKE	10-43995-11630
< RELAYS >			
RL 3	AJW3211	MAD	10-46007-03320
< CONNECTORS >			
CN207	DF1B-14P-2.5DSA	HIR	10-30079-11410
CN920	00-9090-03-0116-805	ELC	10-30508-10031
CN921	00-9090-02-0116-805	ELC	10-30508-10021
< TEST POLES >			
* TP 1			
* TP 2			
* TP 4			
* TP 5			
* TP 7			

• POWER BOARD(PAL) Parts List

POWER BOARD(PAL) 99052-15460 PP-905246 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< RESISTORS >							
TH 2	PTH451A102BG180N270	MUR	10-19012-00202				

• POWER BOARD(NTSC) Parts List

POWER BOARD(NTSC) 99052-15470 PP-905247 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE	NO.	DESCRIPTION	MFD.	PARTS-CODE
< RESISTORS >							
TH 2	PTH451A100BG5R0M140	MUR	10-19012-00201				

4.9 FRONT PANEL BOARD

• FRONT PANEL BOARD Parts List

FRONT PANEL BOARD 99052-15620 PP-905262 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< INTEGRATED CIRCUITS >			
IC 1	NJU3715L	JRC	10-01395-03710
< DIODES >			
D 8	TLG226	TOS	10-03572-00330
D 9	TLG226	TOS	10-03572-00330
D 10	TLG226	TOS	10-03572-00330
D 11	TLG226	TOS	10-03572-00330
D 12	TLG226	TOS	10-03572-00330
D 13	TLG226	TOS	10-03572-00330
D 14	TLG226	TOS	10-03572-00330
D 15	TLG226	TOS	10-03572-00330
D 16	TLG226	TOS	10-03572-00330
D 17	TLG226	TOS	10-03572-00330
D 18	TLG226	TOS	10-03572-00330
D 19	TLG226	TOS	10-03572-00330
D 20	TLG226	TOS	10-03572-00330
D 21	TLG226	TOS	10-03572-00330
D 22	TLY226	TOS	10-03576-01000
D 23	TLY226	TOS	10-03576-01000
D 24	TLY226	TOS	10-03576-01000
D 25	TLY226	TOS	10-03576-01000
* D 27			
* D 28			
< RESISTORS >			
R 3	ERDS2TJ 751 T	MAT	10-12108-75113
R 4	ERDS2TJ 751 T	MAT	10-12108-75113
R 5	ERDS2TJ 751 T	MAT	10-12108-75113
R 6	ERDS2TJ 751 T	MAT	10-12108-75113
R 7	ERDS2TJ 751 T	MAT	10-12108-75113
R 8	ERDS2TJ 751 T	MAT	10-12108-75113
R 9	ERDS2TJ 751 T	MAT	10-12108-75113
R 10	ERDS2TJ 751 T	MAT	10-12108-75113
R 11	ERDS2TJ 751 T	MAT	10-12108-75113
R 12	ERDS2TJ 751 T	MAT	10-12108-75113
R 13	ERDS2TJ 751 T	MAT	10-12108-75113
R 14	ERDS2TJ 751 T	MAT	10-12108-75113
R 15	ERDS2TJ 152 T	MAT	10-12108-15213
R 16	ERDS2TJ 751 T	MAT	10-12108-75113
R 18	ERDS2TJ 472 T	MAT	10-12108-47213
R 19	ERDS2TJ 472 T	MAT	10-12108-47213
R 20	ERDS2TJ 472 T	MAT	10-12108-47213
* R 21			
* R 22			
R 29	ERDS2TJ 103 T	MAT	10-12108-10313
VR 1	RG063UT2 10K Ω	COS	10-15550-10310
VR 2	GV-6UT2 10K Ω	COS	10-15199-10320
VR 3	GV-6UT2 10K Ω	COS	10-15199-10320
VR 4	GV-6UT2 10K Ω	COS	10-15199-10320
VR 5	GV-6UT2 10K Ω	COS	10-15199-10320
VR 6	GV-6UT2 10K Ω	COS	10-15199-10320
VR 7	RG063UT2 10K Ω	COS	10-15550-10310
VR 8	RG063UT2 10K Ω	COS	10-15550-10310
VR 9	RG063UT2 10K Ω	COS	10-15550-10310
VR 10	RG063UT2 10K Ω	COS	10-15550-10310
VR 11	RG063UT2 10K Ω	COS	10-15550-10310
< CAPACITORS >			
C 2	ECEA 1CKA101 B	MAT	10-20128-10716
C 3	ECEA 1CKA101 B	MAT	10-20128-10716
< SWITCHES >			
S 1	SKHHAK	ALP	10-34267-01009
S 2	SKHHAK	ALP	10-34267-01009
S 3	SKHHAK	ALP	10-34267-01009
S 4	SKHHAK	ALP	10-34267-01009
S 5	SKHHAK	ALP	10-34267-01009
S 6	SKHHAK	ALP	10-34267-01009
S 7	SKHHAK	ALP	10-34267-01009
S 8	SKHHAK	ALP	10-34267-01009
S 9	SKHHAK	ALP	10-34267-01009
S 10	SKHHAK	ALP	10-34267-01009
S 11	SKHHAK	ALP	10-34267-01009
S 12	SKHHAK	ALP	10-34267-01009
S 13	SKHHAK	ALP	10-34267-01009
< CONNECTORS >			
CN501	DF1B-30DP-2.5DSA	HIR	10-30079-13000
CN502	A3B-8PA-2DS	HIR	10-30003-00300
CN503	A3B-8PA-2DS	HIR	10-30003-00300

• FRONT PANEL BOARD(24") Parts List

FRONT PANEL BOARD(24") 99052-15630 PP-905263 1 9702

NO.	DESCRIPTION	MFD.	PARTS-CODE
< DIODES >			
D 26	SLP-274B	SYO	10-03553-02740
< RESISTORS >			
R 17	ERDS2TJ 751 T	MAT	10-12108-75113
< SWITCHES >			
S 16	SKHHAK	ALP	10-34267-01009

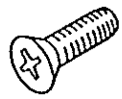
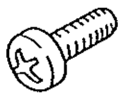
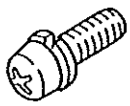
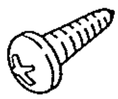
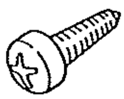
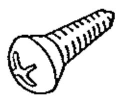
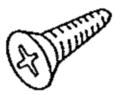
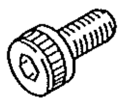
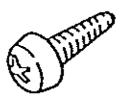
TM24/32-17 9702 VOL1 (U) (E) TM24/32-17

5. EXPLODED VIEW （展開図）

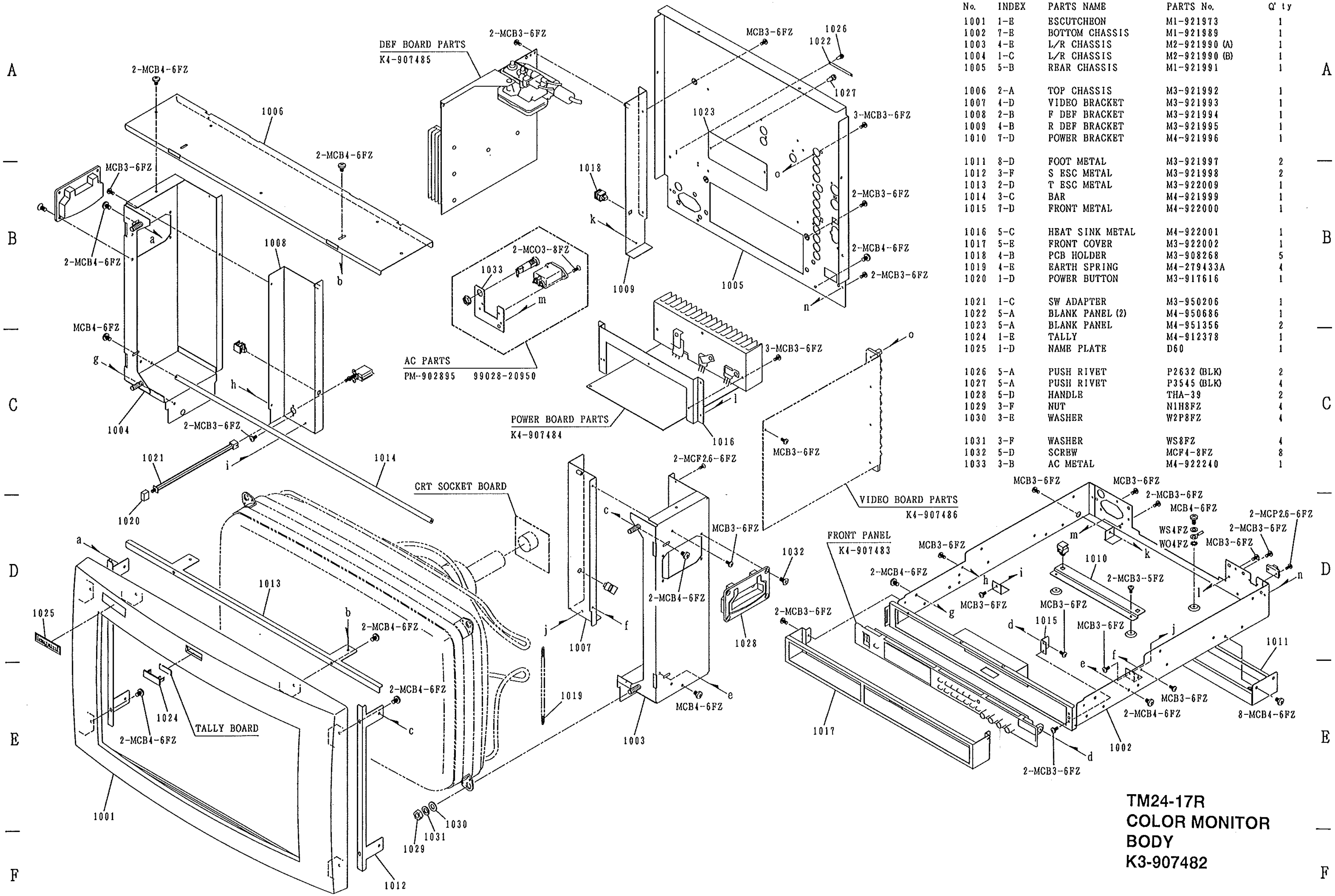
NO.	Japanese	Code	English	JIS NO.
1	なべ小ねじ	NM	PAN HEAD SCREW	B 1111
2	さら小ねじ	SM	FLAT HEAD SCREW, OR FLASH HEAD SCREW	B 1111
3	丸さら小ねじ	MM	OVAL COUNTERSUNK HEAD SCREW	B 1111
4	トラスねじ	TM	TRUSS HEAD SCREW, OR MUSHROOM HEAD SCCEW	B 1111
5	バインド小ねじ	NMB	BINDING HEAD SCREW	B 1111
6	平小ねじ	FM	FLAT FILLSTER HEAD SCREW	B 1111
7	丸平小ねじ	CM	OVAL HEAD SCREW	B 1111
8	セムスねじ	NMS	PAN HEAD SCREW WITH SPRING LOCK WASHER	B 1188
9	トラスタッピングねじ	TT	TRUSS HEAD TAPPING SCREWS	B 1122
10	丸さらタッピングねじ	MT	OVAL COUNTERSUNK HEAD TAPPING SCREWS	B 1122
11	さらタッピングねじ	ST	FLAT HEAD TAPPING SCREWS	B 1122
12	バインドタッピングねじ	BNT	BINDING HEAD TAPPING SCREWS	B 1122
13	ホロセット	HM	HEXAGON SOCKET SET SCREW	B 1177
14	ソケットヘッドキャップスクリュー	SHM	HEXAGON SOCKET HEAD CAP SCREW	B 1176
15	なべタッピングねじ	NT	PAN HEAD TAPPING SCREWS	B 1122
16	ヘリサート	MB-1D	HELI SERT	
17	六角ボルト	BM	HEXAGON HEAD BOLTS	B 1180
18	ちょうボルト	WB	WING BOLTS	B 1184
19	六角ナット	N	HEXAGON NUTS	B 1181
20	ちょうナット	WN	WING NUTS	B 1185
21	六角袋ナット	DN	DOMED CAP NUTS	B 1183
22	ばね座金	SW	SPRING LOCK WASHERS	B 1251
23	平座金	HW	PLANE WASHER	B 1256
24	菊ワッシャー	TW	TOOTHED LOCK WASHER	B 1255
25	割りピン	SPP	SPLIT PINS	B 1351
26	テーパーピン	TAP	TAPER PINS	B 1352
27	平行ピン	PAP	PARALLEL PINS	B 1354
28	スプリングピン	SRP	SPRING PINS	B 2808

Notes : Plane washers are divided into the following two types.

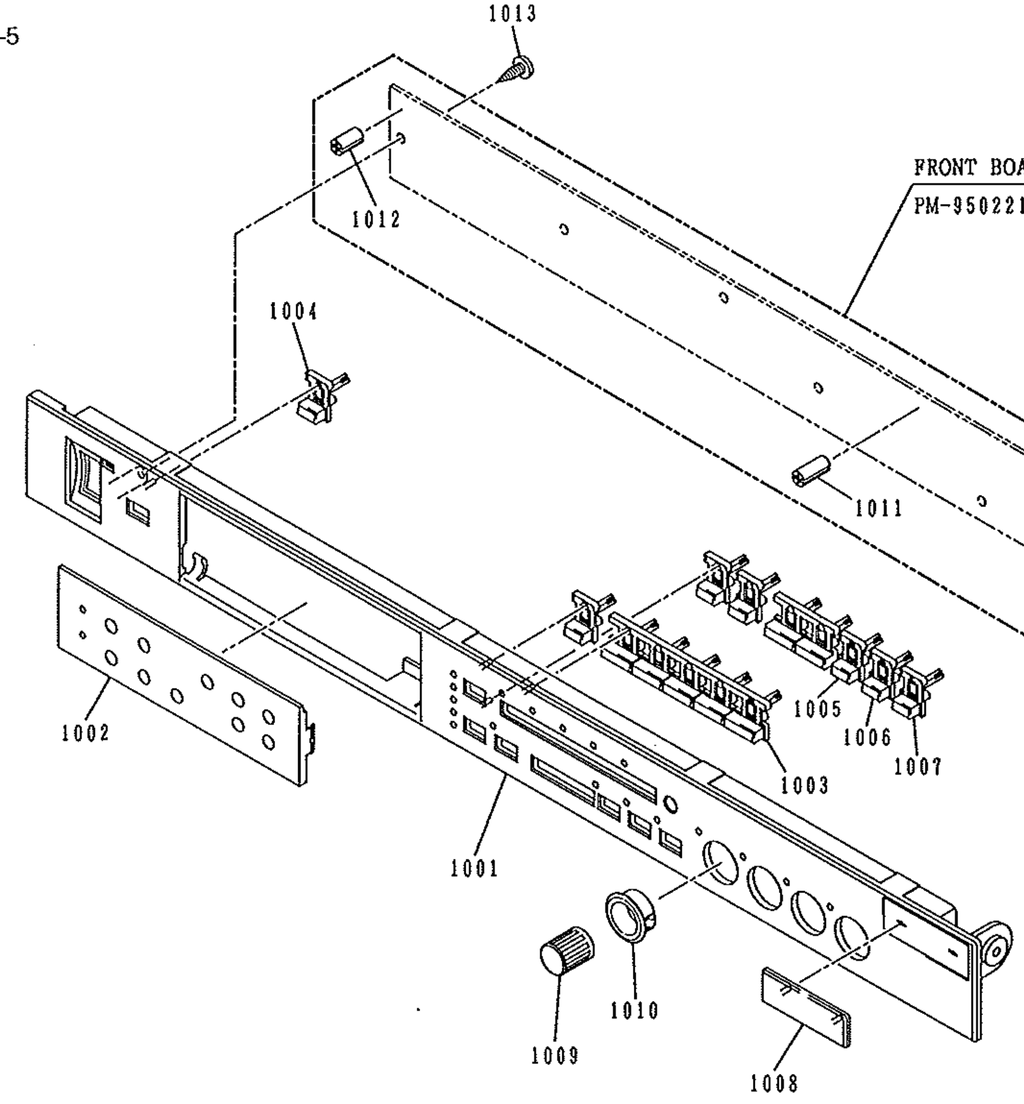
HWS: Washers with neck
HWL: Ordinary washers

1	NM BNM		PAN HEAD SCREW PAN HEAD SCREW (BLACK)
2	SM BSM		FLAT HEAD SCREW FLAT HEAD SCREW (BLACK)
3	MM BMM		OVAL COUNTERSUNK HEAD SCREW OVAL COUNTERSUNK HEAD SCREW (BLACK)
4	TM BTM		TRUSS HEAD SCREW TRUSS HEAD SCREW (BLACK)
5	NMB		BINDING HEAD SCREW
8	NMS		PAN HEAD SCREW WITH SPRING LOCK WASHER
9	TT		TRUSS HEAD TAPPING SCREW
10	BNT		BINDING HEAD TAPPING SCREWS
11	MT		OVAL COUNTERSUNK HEAD TAPPING SCREWS
12	ST		FLAT HEAD TAPPING SCREWS
13	HM		HEXAGON SOCKET SET SCREW
14	SHM		HEXAGON SOCKET HEAD CAP SCREW
15	NT		PAN HEAD TAPPING SCREWS

No.	INDEX	PARTS NAME	PARTS No.	Q' ty
1001	1-E	ESCUTCHEON	M1-921973	1
1002	7-E	BOTTOM CHASSIS	M1-921989	1
1003	4-B	L/R CHASSIS	M2-921990 (A)	1
1004	1-C	L/R CHASSIS	M2-921990 (B)	1
1005	5-B	REAR CHASSIS	M1-921991	1
1006	2-A	TOP CHASSIS	M3-921992	1
1007	4-D	VIDEO BRACKET	M3-921993	1
1008	2-B	F DEF BRACKET	M3-921994	1
1009	4-B	R DEF BRACKET	M3-921995	1
1010	7-D	POWER BRACKET	M4-921996	1
1011	8-D	FOOT METAL	M3-921997	2
1012	3-F	S ESC METAL	M3-921998	2
1013	2-D	T ESC METAL	M3-922009	1
1014	3-C	BAR	M4-921999	1
1015	7-D	FRONT METAL	M4-922000	1
1016	5-C	HEAT SINK METAL	M4-922001	1
1017	5-E	FRONT COVER	M3-922002	1
1018	4-B	PCB HOLDER	M3-908268	5
1019	4-E	EARTH SPRING	M4-279433A	4
1020	1-D	POWER BUTTON	M3-917616	1
1021	1-C	SW ADAPTER	M3-950206	1
1022	5-A	BLANK PANEL (2)	M4-950686	1
1023	5-A	BLANK PANEL	M4-951356	2
1024	1-E	TALLY	M4-912378	1
1025	1-D	NAME PLATE	D60	1
1026	5-A	PUSH RIVET	P2632 (BLK)	2
1027	5-A	PUSH RIVET	P3545 (BLK)	4
1028	5-D	HANDLE	THA-39	2
1029	3-F	NUT	N1H8FZ	4
1030	3-E	WASHER	W2P8FZ	4
1031	3-F	WASHER	WS8FZ	4
1032	5-D	SCREW	MCF4-8FZ	8
1033	3-B	AC METAL	M4-922240	1



TM24-17R
COLOR MONITOR
BODY
K3-907482

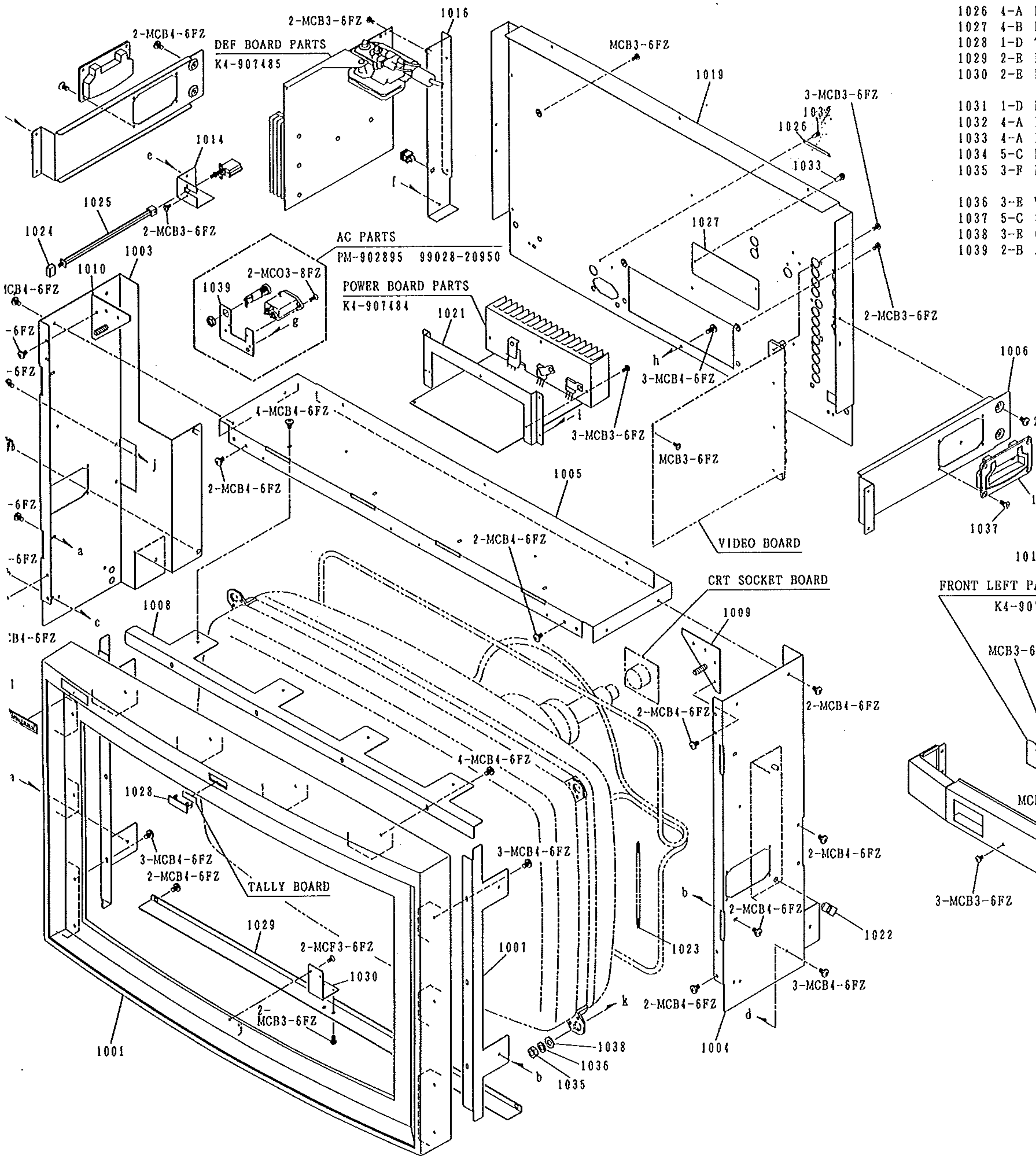


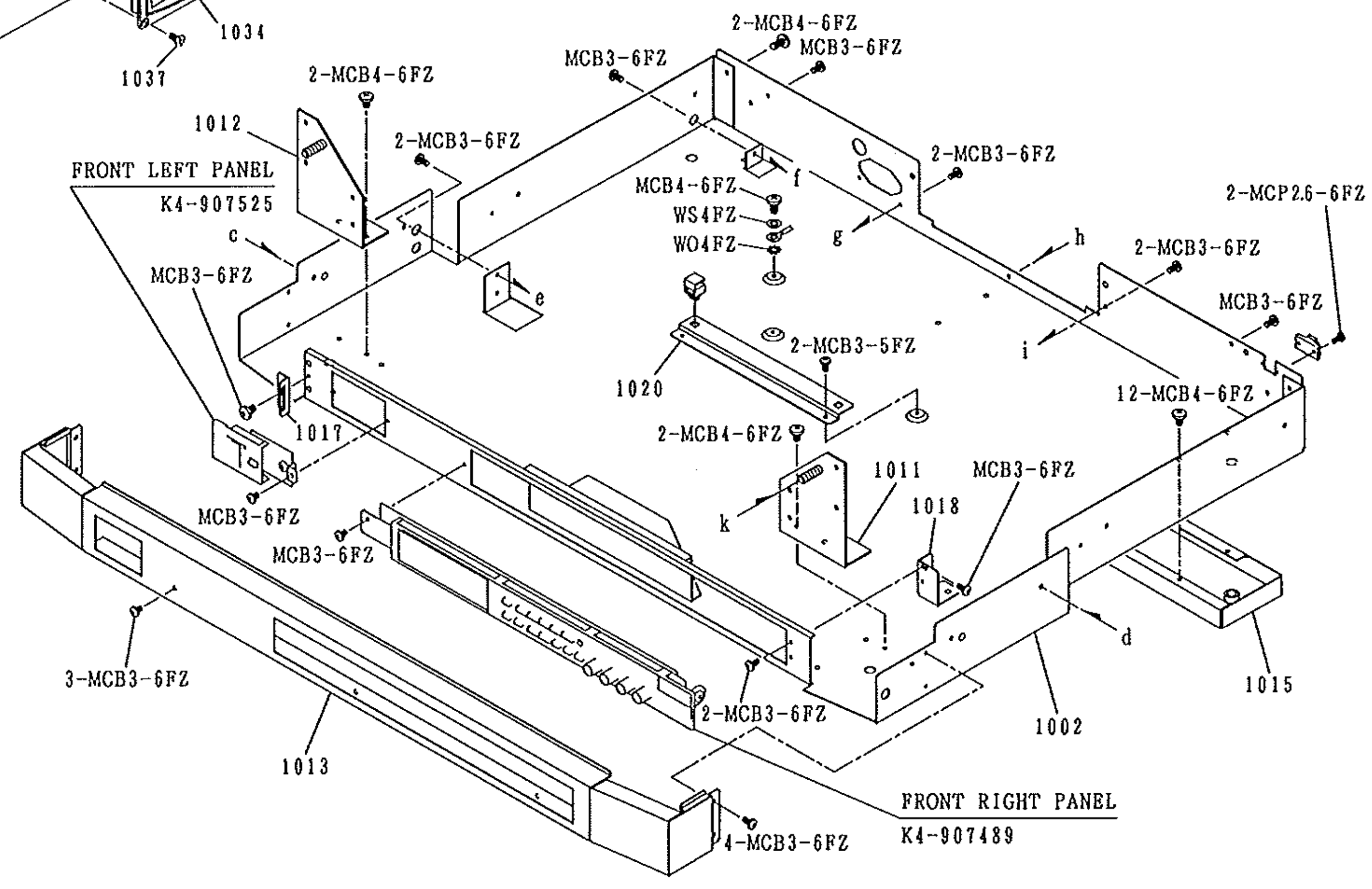
No.	INDEX	PARTS NAME	PARTS No.	Q' ty
1001	2-C	FRONT PANEL	M1-922043	1
1002	1-B	INDICATION PLATE	M2-951003 (a)	1
1003	3-C	BUTTON (1)	M2-950111	2
1004	1-A	BUTTON (3)	M3-950113	4
1005	3-B	BUTTON (R)	M3-950113R	1
1006	3-B	BUTTON (G)	M3-950113G	1
1007	3-C	BUTTON (B)	M3-950113B	1
1008	3-C	MODEL PLATE	M4-921317	1
1009	2-C	VR KNOB	M3-950094	4
1010	2-C	VR GUIDE	M3-950095	4
1011	3-B	LED SPACER	LH-5-10	18
1012	2-A	LED SPACER	LH-5-8	1
1013	2-A	SCREW	T2B3-10FZ	6

TM24-17R
COLOR MONITOR
FRONT PANEL
K4-907483

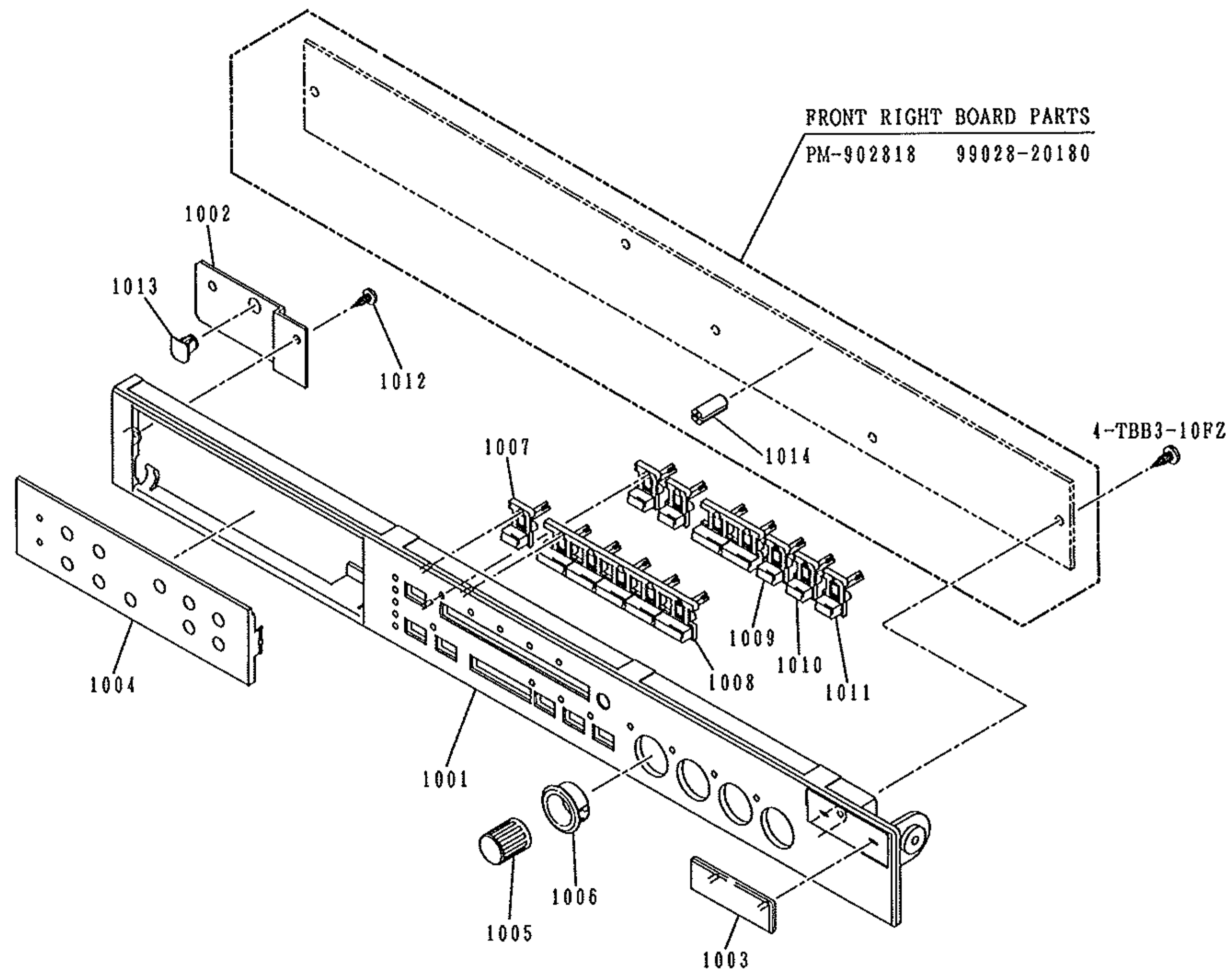
No.	INDEX	PARTS NAME	PARTS No.	Q'ty
1026	4-A	BLANK PANEL (2)	M4-950686	1
1027	4-B	BLANK PANEL	M4-951356	2
1028	1-D	TALLY	M4-912378	1
1029	2-E	ESCUTCHEON METAL (3)	M3-922247	1
1030	2-E	ESCUTCHEON METAL (4)	M4-922248	1
1031	1-D	NAME PLATE	D60	1
1032	4-A	PUSH RIVET	P2632	2
1033	4-A	PUSH RIVET	P3545	4
1034	5-C	HANDLE	THA-39	4
1035	3-F	NUT	N1H8FZ	4
1036	3-E	WASHER	WS8FZ	4
1037	5-C	SCREW	MCF4-8FZ	16
1038	3-E	CRT WASHER	D=φ20, d=φ8.2	8
1039	2-B	AC METAL	M4-922240	1

No.	INDEX	PARTS NAME	PARTS No.	Q'ty
1001	1-E	ESCUTCHEON	M1-922056	1
1002	7-E	CHASSIS	M1-922057	1
1003	1-B	LEFT FRAME	M2-922058	1
1004	4-E	RIGHT FRAME	M2-922059	1
1005	3-C	TOP FRAME	M2-922060	1
1006	5-B	HANDLE METAL	M3-922061	2
1007	3-E	ESCUTCHEON METAL (1)	M3-922062	2
1008	1-C	ESCUTCHEON METAL (2)	M3-922063	1
1009	4-C	CRT METAL (1)	M4-922064 (A)	1
1010	1-B	CRT METAL (1)	M4-922064 (B)	1
1011	7-D	CRT METAL (2)	M3-922065 (A)	1
1012	5-C	CRT METAL (2)	M3-922065 (B)	1
1013	5-E	PANEL COVER	M2-922066	1
1014	2-A	POWER SW METAL	M4-922067	1
1015	8-E	FOOT METAL	M3-922068	2
1016	3-A	R DEF BRACKET	M3-921995	1
1017	5-D	FRONT LEFT METAL (2)	M4-922075	1
1018	7-D	FRONT METAL	M4-922181	1
1019	4-A	REAR COVER	M1-922071	1
1020	6-D	POWER BRACKET	M4-921996	1
1021	3-B	HEAT SINK METAL	M4-922001	1
1022	5-E	PCB HOLDER	M3-908268	5
1023	4-E	EARTH SPRING	M4-279433A	4
1024	1-B	POWER BUTTON	M3-917616	1
1025	1-A	SW ADAPTER	M3-950206	1





TM32-17
COLOR MONITOR
BODY
K3-907488



No.	INDEX	PARTS NAME	PARTS No.	Q'ty
1001	2-C	FRONT PANEL	M1-922043	1
1002	1-B	INDICATION PLATE	M2-951003 (a)	1
1003	3-C	BUTTON (1)	M2-950111	2
1004	1-A	BUTTON (3)	M3-950113	4
1005	3-B	BUTTON (R)	M3-950113R	1
1006	3-B	BUTTON (G)	M3-950113G	1
1007	3-C	BUTTON (B)	M3-950113B	1
1008	3-C	MODEL PLATE	M4-921317	1
1009	2-C	VR KNOB	M3-950094	4
1010	2-C	VR GUIDE	M3-950095	4
1011	3-B	LED SPACER	LH-5-10	18
1012	2-A	LED SPACER	LH-5-8	1
1013	2-A	SCREW	T2B3-10FZ	6

TM32-17
COLOR MONITOR
FRONT RIGHT PANEL
K4-907489

TM24-17R/RP
TM32-17/P
COLOR MONITOR

SERVICE MANUAL

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